Cat. No. 15-1225B

OWNER'S MANUAL

Please read before using this equipment

ARCHEROTOR®

Antenna Rotator

Your Archerotor lets you turn and accurately position even the largest TV antennas from inside your home. This ensures the best possible TV reception. When you turn the control's dial for the desired direction, the drive motor turns the antenna. When the antenna reaches the desired direction, the motor automatically turns off.

Important Note: For your safety, read "Important Safeguards" and all safety, installation, and operating instructions supplied with your antenna. Keep this manual for your future reference.

PRELIMINARY TESTING

Before you install the Archerotor, do the following:

☐ In your home, temporarily connect the drive to the control. See "Wiring the Drive Motor" and "Wiring the Control."

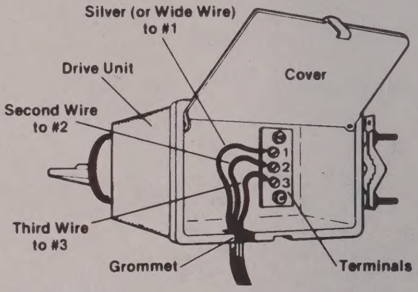
☐ Test the Archerotor as described under "Synchronizing and Testing."

INSTALLATION

Use 20-gauge three-wire rotator cable, such as Radio Shack Cat. No. 15-1149 or 15-1150, to connect the drive to the control.

Wiring the Drive Motor

Follow these steps to wire the drive motor.



1. Snap open the drive's cover using a coin or screwdriver.
2. Remove the grommet and insert the rotator cable through the grommet's slot.
3. Separate the cable's three wires about 1 ½ inches down the cable and strip off about ½ inch of insulation from each wire.
4. Connect the wide wire to Terminal 1, connect the center wire to Terminal 2, and connect the third wire to Terminal 3.

   Caution: Be sure there are no loose strands of wire that can short between terminals.
5. Recheck the wiring order and press the grommet back into the housing.
6. Close the cover securely.

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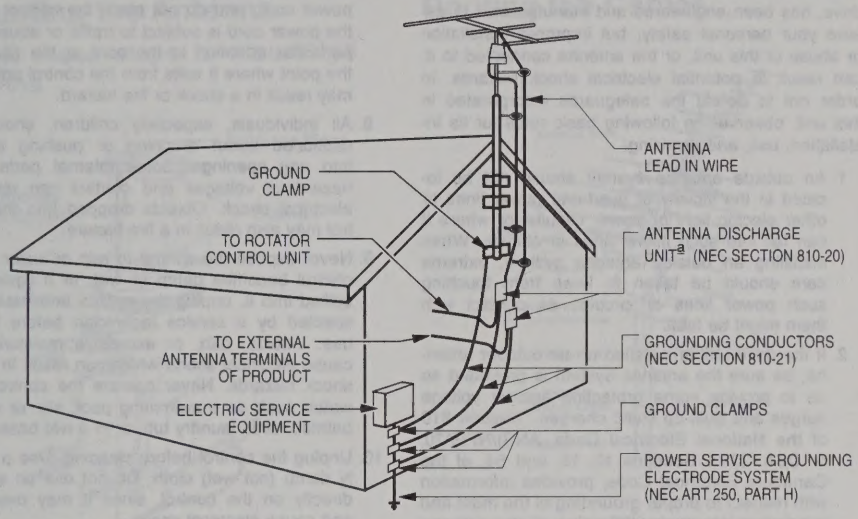
FIGURE 56.1

EXAMPLE OF ANTENNA GROUNDING AS PER NATIONAL ELECTRICAL CODE

Revised Figure 56.1 effective December 2, 1993


ANTENNA LEAD IN WIRE
GROUND CLAMP
ANTENNA DISCHARGE UNIT[a] (NEC SECTION 810-20)
TO ROTATOR CONTROL UNIT
TO EXTERNAL ANTENNA TERMINALS OF PRODUCT
GROUNDING CONDUCTORS (NEC SECTION 810-21)
GROUND CLAMPS
ELECTRIC SERVICE EQUIPMENT
POWER SERVICE GROUNDING ELECTRODE SYSTEM (NEC ART 250, PART H)

NEC - NATIONAL ELECTRICAL CODE

S2961A

[a] Antenna Discharge unit is not required if lead-in conductors are enclosed in a continuous metallic shield that is permanently and effectively grounded.

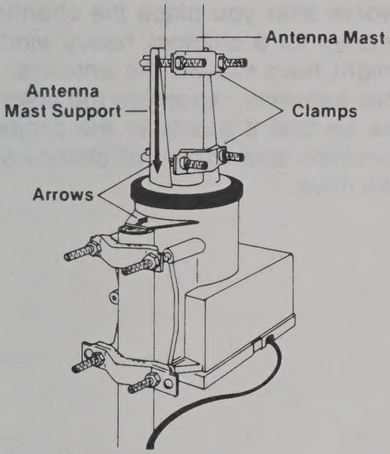
IMPORTANT SAFEGUARDS

Your antenna drive unit, consisting of a control and a drive, has been engineered and manufactured to assure your personal safety, but improper installation or abuse of this unit, or the antenna connected to it, can result in potential electrical shock hazards. In order not to defeat the safeguards incorporated in this unit, observe the following basic rules for its installation, use, and servicing.

1. An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits, as contact with them might be fatal.
2. If the drive unit is installed on an outdoor antenna, be sure the antenna system is grounded so as to provide some protection against voltage surges and built-up static charges. Section 810 of the National Electrical Code, ANSI/NFPA70, or CSA C22.1 Sections 10, 16, and 54, of the Canadian Electrical Code, provides information with respect to proper grounding of the mast and supporting structure, grounding of the antenna lead-in wire and drive-unit to control-unit interconnecting cables to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See grounding code on the back of this page.
3. Your control is provided with ventilation openings to allow heat generated during operation to be released. If these openings are blocked, heat build-up can cause failure of the control and external damage. Therefore:
   - Never block the ventilation slots by placing it on a bed, sofa, rug, etc.
   - Never place in a built-in enclosure unless proper ventilation is provided.
   - Never cover the openings with cloth or other material.
   - Never place near or over radiators, heat registers, amplifiers, or other heat sources.
4. Your control may be equipped with with a polarized AC line plug (one blade of the plug is wider than the other). This safety feature allows the plug to fit into the power outlet only one way. Should you be unable to insert the plug fully into the outlet, try reversing the plug. Should it still fail to fit, contact your electrician to replace the obsolete outlet. Do not defeat the safety purpose of the polarized plug.
5. Operate the control only from an AC power source as indicated on the bottom of the control. Do not use DC.
6. Overloaded AC outlets and extension cords are dangerous, and so are frayed power cords and broken plugs. They may result in a shock or fire hazard. Unplug the control and call your service technician for replacement.
7. Do not allow anything to rest on or roll over the power cord, and do not place the control where the power cord is subject to traffic or abuse. Pay particular attention to the cord at the plug and the point where it exits from the control unit. This may result in a shock or fire hazard.
8. All individuals, especially children, should be cautioned about dropping or pushing objects into any openings. Some internal parts carry hazardous voltages and contact can result in electrical shock. Objects dropped into the control may also result in a fire hazard.
9. Never expose the control to rain or water. If the control becomes damp or wet, or if liquids are spilled into it, unplug the control and have it inspected by a service technician before further use. Liquids, rain, or excessive moisture may cause electrical shorts which can result in fire or shock hazards. Never operate the control near water; such as a swimming pool, etc. or near a bathtub, sink, laundry tub, or in a wet basement.
10. Unplug the control before cleaning. Use a slightly damp (not wet) cloth. Do not use an aerosol directly on the control, since it may overspray and cause electrical shock.
11. Whenever the unit exhibits distinct change in performance, unplug the control and call your dealer or service technician.
12. Any attempt to disassemble the control or drive portions of this unit may expose you to high voltage or other hazards. Observe all cautionary labels, warnings, and safeguards.
13. If the control has been dropped or the case has been damaged, fire and shock hazard may exist. Unplug the control and have it checked by a service technician before use.
14. When replacement parts are required, have the service technician verify that the replacement parts have the same safety characteristics as the original parts. Unauthorized substitutions may result in a risk of fire or electric shock, or other risks.
15. Upon completion of any service or repairs to the unit, please ask the service technician to perform routine safety checks to determine that the unit is in a safe operating condition.
16. For added protection of the control during a lightning storm or when the control is to be left unattended for an extended period of time, unplug it from the wall outlet and disconnect the drive cable. This will prevent possible shock, fire hazard, and damage to the control due to lightning storms or power line surges.
17. Always use extreme caution when installing a rooftop antenna and drive system to reduce the risk of falls. Wear rubber-soled shoes and use a sturdy ladder. Do not install on a windy day or when the roof is wet or is covered with ice or snow.

Mounting the Antenna

Follow these steps to mount the antenna.

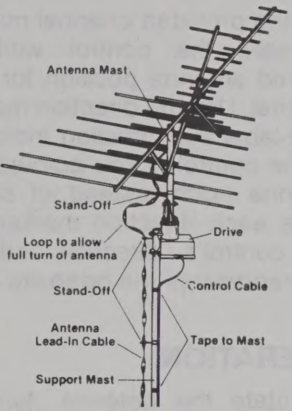


1. Loosen the clamps on the drive's antenna mast support enough to accept the mast.
2. Insert the antenna mast between the clamps. Then, rotate the antenna mast until the antenna points south, and tighten the clamp nuts.

   Caution: Overtightening can deform and weaken the mast.

   Note: When most desired stations are north, point the antenna north. If you do this, remember that the antenna points in the opposite direction from that indicated on the control. Use the direction markers as described under "Channel and Direction Markers."
3. Attach the antenna cable to the antenna.

Routing the Cables



- If you have 75-ohm coaxial antenna cable, tape the cable directly to the support mast.
- If you have 300-ohm twin-lead antenna cable, attach it to the antenna and support mast using stand-off insulators (not included) about every 4 feet. Twist the cable about four times between each insulator.

For either type of antenna cable, provide a generous loop at the drive to allow full rotation of the antenna.

Tape the rotator cable directly to the support mast.

Route the antenna cable and rotator cable to the location of your TV and Archerotor control. Then, connect the antenna cable to your TV and connect the rotator cable to the control. See "Wiring the Control."

CHANNEL AND DIRECTION MARKERS

Use the provided channel markers to mark the control with the desired antenna position for each channel. Use the direction markers to re-label the direction indicators on the control (if you pointed your antenna north instead of south). Place each direction marker over the control's direction indicator that represents the opposite direction.

OPERATION

To rotate the antenna, turn the control's dial for the desired direction. While the antenna rotates, the indicator dot moves, indicating the direction of antenna rotation. When the antenna reaches the selected direction, it stops.

Caution: Do not force the control's dial fully clockwise past N or fully counterclockwise past N. Doing so might damage the control.

REPOSITIONING YOUR ANTENNA

If a TV channel's reception gets worse after you place the channel marker for a channel, heavy winds might have moved the antenna. If this happens, reposition the antenna so that it points in the proper direction and tighten all clamps on the drive.

NOTES

CHANNEL AND DIRECTION MARKERS

Use the provided channel markers to mark the control with the desired antenna position for each channel. Use the direction markers to re-label the direction indicators on the control (if you pointed your antenna north instead of south). Place each direction marker over the control's direction indicator that represents the opposite direction.

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☐ Test the Archerotor as described under "Synchronizing and Testing."

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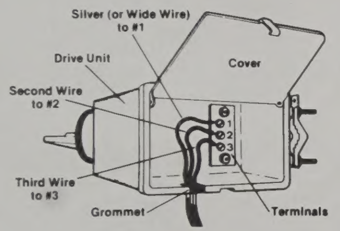

1. Snap open the drive's cover using a coin or screwdriver.
2. Remove the grommet and insert the rotator cable through the grommet's slot.
3. Separate the cable's three wires about 1 ½ inches down the cable and strip off about ½ inch of insulation from each wire.
4. Connect the wide wire to Terminal 1, connect the center wire to Terminal 2, and connect the third wire to Terminal 3.

   Caution: Be sure there are no loose strands of wire that can short between terminals.
5. Recheck the wiring order and press the grommet back into the housing.
6. Close the cover securely.

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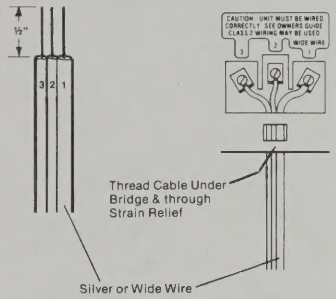
Wiring the Control

Follow these steps to wire the control.


½"
3
2
1
CAUTION UNIT MUST BE WIRED CORRECTLY SEE OWNERS GUIDE CLASS 2 WIRING MAY BE USED
3
2
WIDE WIRE
1
Thread Cable Under Bridge & through Strain Relief
Silver or Wide Wire

1. On the other end of the rotator cable, separate the wires about 1 ½ inches down the cable and strip about ½ inch of insulation from each wire.
2. Run the cable through the strain relief slot on the bottom of the control and connect the wires as follows:

   Connect the wide wire to Terminal 1, connect the center wire to Terminal 2, and connect the third wire to Terminal 3.
3. Recheck the wiring order and tighten all the terminal screws.

Caution: Be sure there are no loose strands of wire that could short between terminals.

Warning: To reduce the risk of electric shock, do not remove cover. No user-serviceable parts inside. Refer servicing to qualified service personnel.

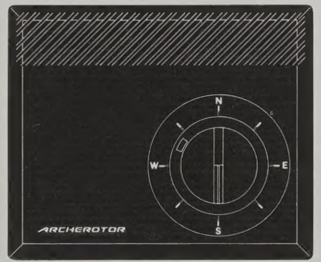
⚡ The lightning symbol indicates the presence of uninsulated "Dangerous Voltage" within the product's enclosure that may constitute a risk of electric shock.

⚠ The exclamation point indicates the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Synchronizing and Testing

Follow these steps to synchronize and test the Archerotor.

1. After you wire the drive and control, plug the control's power cord into a standard AC outlet (120 volts, 60 Hz).
2. Turn the control's dial fully clockwise. The indicator dot on the control's disc moves clockwise and you can hear the control's motor.

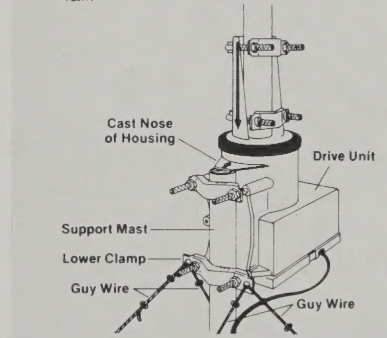
   When the antenna reaches the end of rotation, the dot stops and the control turns off.
3. Turn the control's dial fully counterclockwise. When the dot stops and the control turns off, the control and drive are synchronized.

4. Turn the control's dial to S (south) to align the two arrows on the drive.
5. Disconnect the rotator cable from the control so that you can mount the drive.

Mounting the Drive

You can mount the drive on a support mast 1 ¼ inch to 2 inches in diameter. If the mast is over 5 feet long, we recommend that you use guy wires to secure the mast.

Warning: Select a mounting location where the antenna cannot come in contact with power lines while you install it, and where the installation cannot fall across power lines if a guy wire should fail.



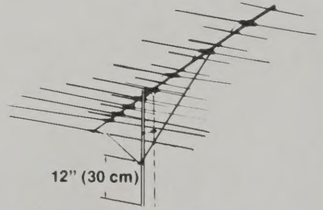
1. Loosen the support mast clamp nuts enough to fit the clamps over the mast.
2. Lower the drive onto the mast until the cast nose of the drive's housing sits on top of the mast.
3. Use a 7/16-inch wrench to tighten the clamps' nuts.

   Caution: Overtightening can deform and weaken the mast.
4. If you use guy wires to secure the mast, guide the wires through the two holes of the lower clamp.

Antenna Mast

Before you mount the antenna, cut the antenna mast using the following guidelines. If the antenna boom is:

- Up to 5 feet long, the mast length should not exceed 5 feet.
- Up to 8 feet long, the mast length should not exceed 3 feet.
- Over 8 feet long, the mast length should not exceed 2 feet.
- Over 8 feet long with braces, cut the antenna mast 12 inches below the point where you attach the braces to the mast.

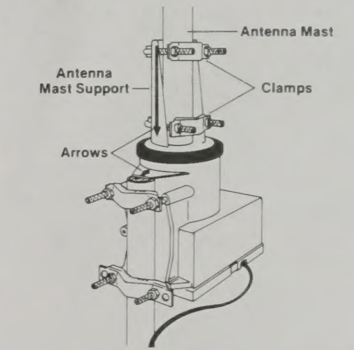


Large Antenna with Braces

If you mount two antennas to the mast, the mast length should not exceed 4 feet. Mount the small antenna on top of the mast and the larger antenna 12 inches from the bottom of the mast.

Mounting the Antenna

Follow these steps to mount the antenna.

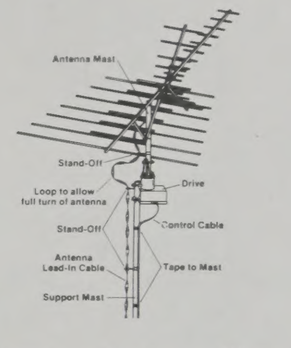


1. Loosen the clamps on the drive's antenna mast support enough to accept the mast.
2. Insert the antenna mast between the clamps. Then, rotate the antenna mast until the antenna points south, and tighten the clamp nuts.

   Caution: Overtightening can deform and weaken the mast.

   Note: When most desired stations are north, point the antenna north. If you do this, remember that the antenna points in the opposite direction from that indicated on the control. Use the direction markers as described under "Channel and Direction Markers."
3. Attach the antenna cable to the antenna.

Routing the Cables



- If you have 75-ohm coaxial antenna cable, tape the cable directly to the support mast.
- If you have 300-ohm twin-lead antenna cable, attach it to the antenna and support mast using stand-off insulators (not included) about every 4 feet. Twist the cable about four times between each insulator.

For either type of antenna cable, provide a generous loop at the drive to allow full rotation of the antenna.

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Route the antenna cable and rotator cable to the location of your TV and Archerotor control. Then, connect the antenna cable to your TV and connect the rotator cable to the control. See "Wiring the Control."

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REPOSITIONING YOUR ANTENNA

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NOTES

RADIO SHACK LIMITED WARRANTY

This product is warranted against defects for 90 days from date of purchase from Radio Shack company-owned stores and authorized Radio Shack franchisees and dealers. Within this period, we will repair it without charge for parts and labor. Simply **bring your Radio Shack sales slip** as proof of purchase date to any Radio Shack store. Warranty does not cover transportation costs. Nor does it cover a product subjected to misuse or accidental damage.

EXCEPT AS PROVIDED HEREIN, RADIO SHACK MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Some states do not permit limitation or exclusion of implied warranties; therefore, the aforesaid limitation(s) or exclusion(s) may not apply to the purchaser.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

We Service What We Sell

RADIO SHACK
A Division of Tandy Corporation
Fort Worth, Texas 76102

2A0

Printed in U.S.A.

CF-4889 Rev. 4/90 **A**

Cat. No. 15-1225B

OWNER'S MANUAL

Please read before using this equipment

ARCHEROTOR®

Antenna Rotator

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EXCEPT AS PROVIDED HEREIN, RADIO SHACK MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Some states do not permit limitation or exclusion of implied warranties; therefore, the aforesaid limitation(s) or exclusion(s) may not apply to the purchaser.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

We Service What We Sell

RADIO SHACK
A Division of Tandy Corporation
Fort Worth, Texas 76102

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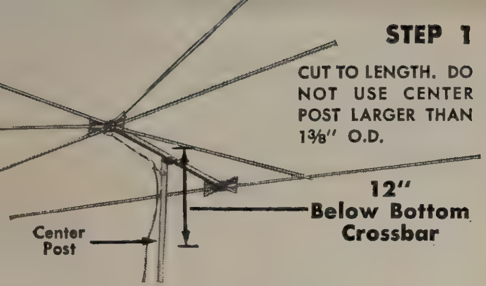
CF-4889 Rev. 4/90 **A**

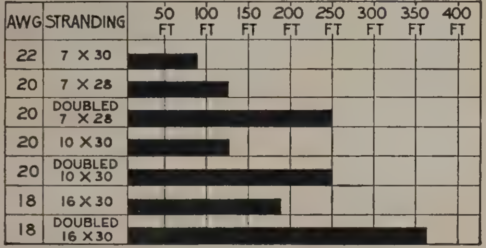
STEP 1



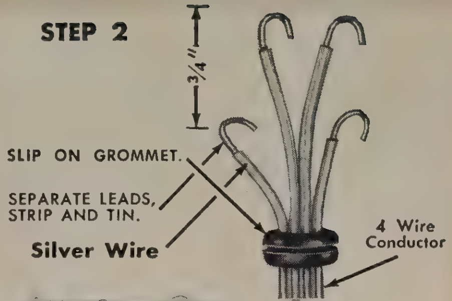
CUT TO LENGTH. DO NOT USE CENTER POST LARGER THAN 1⅜″ O.D.

12″ Below Bottom Crossbar

For proper performance do not exceed the maximum lengths per wire size (AWG) on chart.



STEP 2

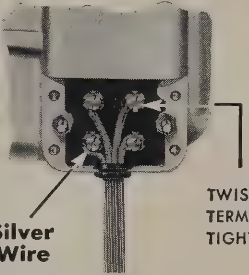


SLIP ON GROMMET.

SEPARATE LEADS, STRIP AND TIN.

Silver Wire

STEP 3

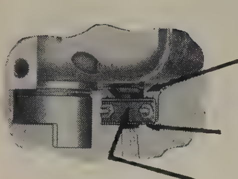


Silver Wire

TWIST WIRES AROUND TERMINAL SCREWS AND TIGHTEN SECURELY.

IMPORTANT: NOTE EXACT LOCATION OF EACH WIRE.

STEP 4



FIT GROMMET INTO TERMINAL COVER SLOT.

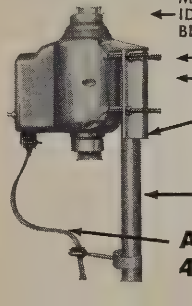
TIGHTEN DOWN GASKET AND TERMINAL COVER.

INSULATE WITH FRICTION TAPE.

TIGHTEN DOWN STRAIN RELIEF OVER TAPE.

Attach set screw and nut to clamp plate.

CLAMP TENNA-ROTOR ON MAST



MODEL U-100 IS IDENTIFIED BY BLUE WEATHER SHIELD

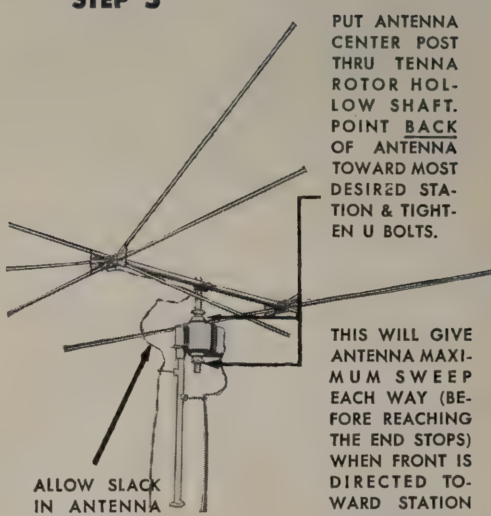
TIGHTEN SET SCREW.

THESE THREE HOLES MAY BE USED FOR GUYING.

Mast

ALLOW SLACK IN 4 WIRE CONDUCTOR

STEP 5

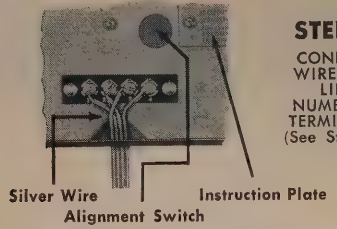


PUT ANTENNA CENTER POST THRU TENNA ROTOR HOLLOW SHAFT. POINT BACK OF ANTENNA TOWARD MOST DESIRED STATION & TIGHTEN U BOLTS.

THIS WILL GIVE ANTENNA MAXIMUM SWEEP EACH WAY (BEFORE REACHING THE END STOPS) WHEN FRONT IS DIRECTED TOWARD STATION (RECEPTION POSITION).

ALLOW SLACK IN ANTENNA LEAD-IN WIRE FOR 1 REVOLUTION.

X-8906-A-25M 2-63 S-H Ptd. in U.S.A.



STEP 6

CONNECT
WIRES TO
LIKE
NUMBERED
TERMINALS.
(See Step 3.)

Unit is shipped with rotator against stop. If unit is operated before installing, return hollow shaft to stop position and synchronize control box as per instruction plate on underside before proceeding with Step 7.

STEP 7

TO ALIGN CONTROL BOX: Check antenna direction. Remove plastic knob and move "Red Dial Indicator" to same direction as antenna. Use sharp instrument through hole, as shown below, to set "Red Dial Indicator."

Replace knob with "Gold Pointer" aligned with "Red Dial Indicator."

OPERATING INSTRUCTIONS

Simply move "knob pointer" to desired direction. The "red dial indicator" shows position of antenna as it is moving.

Allow unit to come to rest before reversing direction.

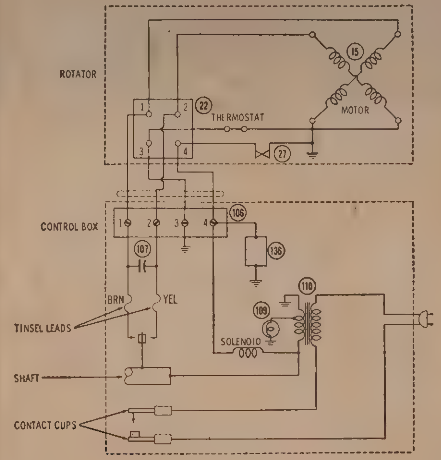
If desired to turn a complete circle (from stop to stop) move knob halfway and allow "Red Pointer" to come to rest, then turn knob remainder of way.

Do not force knob when end stops are reached.

The unit is guaranteed for 90 days against defective materials and workmanship in accordance with E.I.A. standards.

LIGHTNING PROTECTION

For an approved installation of this equipment, it is recommended that the two outside wires of the four conductor cable, which connects between the control box and the antenna rotator on the mast, be grounded through an Underwriters' Laboratories approved lightning arrester. The arrester should be located close to the point of entry of the four wire cable into the building.



WIRING DIAGRAM

alliance
Automatic TENNA-ROTOR

MODEL U-100

Latest Model Antenna Rotator for "Top" TV-FM Reception!

- Fully automatic
- Superb styling
- Easy to install

AIM YOUR ANTENNA for CLEAR-CUT PICTURES!

The Larsen® No Nonsense Full Six Month

Warranty

Larsen Electronics, Inc. and Canadian Larsen Electronics, Ltd. warrant to every user of a Larsen Antenna that it will perform to its specified ratings (published specifications) and will be free from defects in materials and workmanship.

Larsen will repair or replace, without charge, any Larsen Antenna which fails within six months of the purchase date to meet this warranty. Excluded, of course, is failure due to misuse such as striking solid or foreign objects (trees, buildings, overhangs, doorways, etc.), improper installation and application of power in excess of specified ratings.

Larsen will not, however, be responsible for any incidental or consequential damages due to failure of a Larsen Antenna under this warranty or any implied warranty.

In the United States some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

Larsen Antennas

IN U.S.A.:
Larsen Electronics, Inc.
11611 N.E. 50th Avenue
P.O. Box 1799
Vancouver, WA 98668
Phone 206-573-2722

IN CANADA:
Canadian Larsen
Electronics, Ltd.
149 West 6th Avenue
Vancouver, B.C. V5Y 1K3
Phone 604-872-8517

Litho U.S.A.

1012-0985-Rev. A

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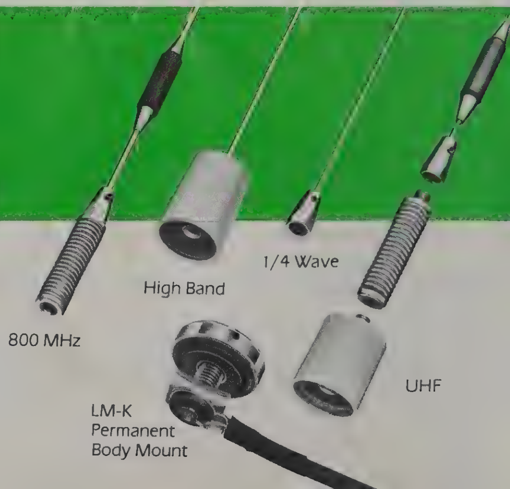
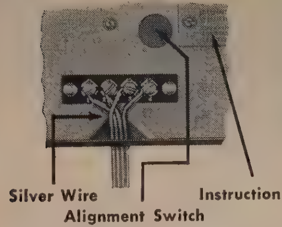
Larsen Antennas

Kūlrod® Antenna Installation/Mounting Instructions & Warranty.

LM SERIES





STEP 6

CONNECT
WIRES TO
LIKE
NUMBERED
TERMINALS.
(See Step 3.)

Unit is shipped with rotator against stop. If unit is operated before installing, return hollow shaft to stop position and synchronize control box as per instruction plate on underside before proceeding with Step 7.

STEP 7

TO ALIGN CONTROL BOX: Check antenna direction. Remove plastic knob and move "Red Dial Indicator" to same direction as antenna. Use sharp instrument through hole, as shown below, to set "Red Dial Indicator."

Replace knob with "Gold Pointer" aligned with "Red Dial Indicator."

OPERATING INSTRUCTIONS

Simply move "knob pointer" to desired direction. The "red dial indicator" shows position of antenna as it is moving.

Allow unit to come to rest before reversing direction.

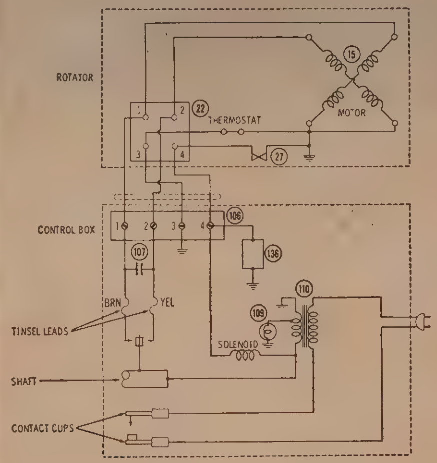
If desired to turn a complete circle (from stop to stop) move knob halfway and allow "Red Pointer" to come to rest, then turn knob remainder of way.

Do not force knob when end stops are reached.

The unit is guaranteed for 90 days against defective materials and workmanship in accordance with E.I.A. standards.

LIGHTNING PROTECTION

For an approved installation of this equipment, it is recommended that the two outside wires of the four conductor cable, which connects between the control box and the antenna rotator on the mast, be grounded through an Underwriters' Laboratories approved lightning arrester. The arrester should be located close to the point of entry of the four wire cable into the building.



WIRING DIAGRAM

alliance
Automatic TENNA-ROTOR

MODEL U-100

Latest Model Antenna Rotator for "Top" TV-FM Reception!

- Fully automatic
- Superb styling
- Easy to install

AIM YOUR ANTENNA for CLEAR-CUT PICTURES!

TEMPORARY
MOUNTING INSTRUCTIONS

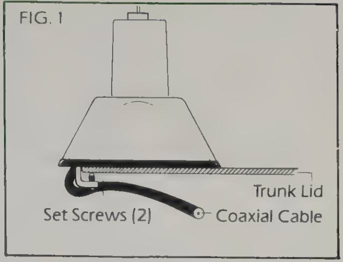
TLM SERIES

TRUNK LID MOUNT — For superior ground plane performance on a trunk lid.

1. Center the TLM mount on the lip of the truck lid nearest the rear window.

2. Tighten the two set screws with the supplied allen wrench, sufficiently to break through the paint and establish a good ground connection (Fig. 1).

FIG. 1



3. Route the coaxial cable from the trunk area to the radio. Install the PL-259 connector (supplied with TLM kits). Connect antenna cable to radio.

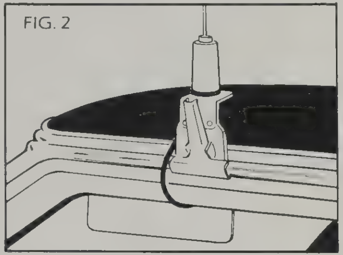
GC SERIES

GUTTER CLAMP MOUNT — Provides a positive ground plane for full antenna efficiency.

1. Attach Larsen Kūlrod antenna to GC mount. Tighten firmly but do not use excess pressure.

2. Clamp mount to the side gutter of your car or truck (Fig. 2).

FIG. 2



3. Route coaxial cable through the window to the radio. Install the PL-259 connector (supplied). Connect antenna cable to radio.

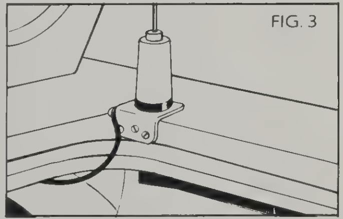
TMB SERIES

TRUNK GUTTER MOUNT — Simple installation with a stainless steel "L" bracket.

1. Position Larsen Trunk Gutter Mount on inside of the trunk gutter or the engine hood as shown (Fig. 3).

2. Tighten three stainless steel self-tapping screws with supplied allen wrench.

FIG. 3



3. Route coaxial cable from the trunk area to the radio. Install the PL-259 connector (supplied). Connect antenna cable to radio.

MM SERIES

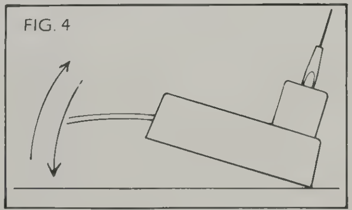
MAGNETIC MOUNT — Super Hold with minimal chance of scratching painted surfaces.

1. Thoroughly clean and remove all dust and gritty material from the surface upon which the mount is to be placed, and from the aluminum surface of the mount.

2. Place short end of the mount forward to provide the greatest resistance to wind and obstructions.

3. **Do not slide** the mount once it is in place. Sliding would greatly increase the risk of scratching the painted surface.

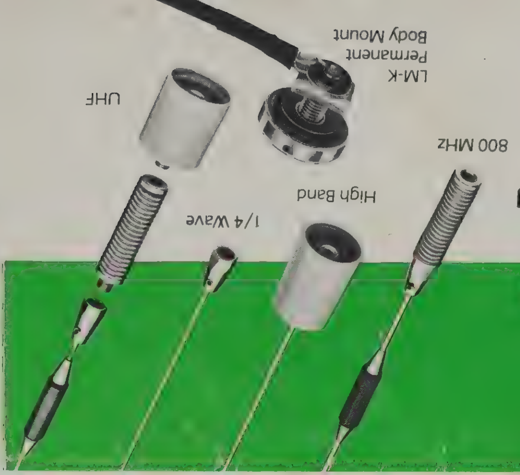
FIG. 4



4. Start the mount with the short side down. Use the antenna as a handle. Gently pivot the mount down until it snaps into place. (Fig. 4).

5. To remove mount, reverse the procedure.

The mount may be used on some vinyl roofs, with a reduction in holding power. Some loss in electrical capacitance will occur which may upset the operation of the antenna at some frequencies.



Larsen Antennas

Kūlrod® Antenna
Installation/Mounting
Instructions &
Warranty

LM
SERIES

Larsen Antennas

IN U.S.A.:
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Litho U.S.A.

1012-0985-Rev. A

Larsen®, Kūlrod® and Kūlduckie® are registered trademarks of Larsen Electronics, Inc., U.S.A.

The Larsen® No Nonsense Full Six Month

Warranty

Larsen Electronics, Inc. and Canadian Larsen Electronics, Ltd. warrant to every user of a Larsen Antenna that it will perform to its specified ratings (published specifications) and will be free from defects in materials and workmanship.

Larsen will repair or replace, without charge, any Larsen Antenna which fails within six months of the purchase date to meet this warranty. Excluded, of course, is failure due to misuse such as striking solid or foreign objects (trees, buildings, overhangs, doorways, etc.), improper installation and application of power in excess of specified ratings.

Larsen will not, however, be responsible for any incidental or consequential damages due to failure of a Larsen Antenna under this warranty or any implied warranty.

In the United States some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

CONGRATULATIONS!

You are installing an effective and efficient Larsen® Kūlrod® Antenna, engineered and field tested to deliver top performance. Follow these simple installation instructions and find out why "You Can Hear the Difference" with Larsen Antennas. Low band, high band and quarter wave antennas all handle 200 watts of output power. Larsen UHF and 800 MHz models handle a full 150 watts.

GROUND PLANE REQUIREMENTS

Larsen Kūlrod® Antennas work against a suitable ground plane. Adequate reflected power may be had with a single ground element as small as 19" long and 1/2" wide. However, you can improve performance by making the ground plane larger.

ANTENNA LOCATION

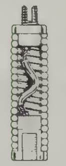
The best location for a mobile antenna is on the vehicle's roof top. Next best is the rear fender. In this case you can minimize shadowing by the forward part of the car by mounting the antenna well to the rear. A third option is the trunk lid.

CAUTION

Under some conditions, low band antennas (27 to 54 MHz) on a trunk lid can result in an undesirable resonance with excessively high VSWR at some frequencies.

ADJUSTING TO FREQUENCY

Just cut the rod to the correct length for the operating frequency (see cutting chart).



SHOCK SPRING

Larsen's narrow diameter shock spring is made of electropolished stainless steel and is positively shorted to keep performance loss to an absolute minimum. Shock springs are standard on 800 MHz gain antennas and optional for VHF and UHF antennas. Rod cutting information is provided for with-spring and without-spring options.

CUTTING THE ROD

The Larsen Kūlrod® whip is constructed of the highest grade 17-7PH stainless steel, to provide all-weather protection and maximum radiation efficiency. It is hard to cut. For best results use the Larsen CTR Rod Cutter, the edge of a grinding wheel, or the sharp corner of a file. Use the file to score the rod around its circumference so it may be snapped off with a pair of pliers.

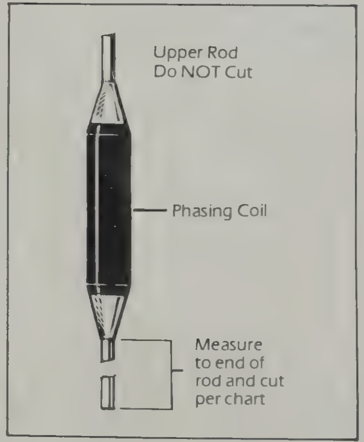
MEASURING THE ROD LENGTH — LOW BAND AND HIGH BAND

Each Larsen Antenna whip in these frequencies is 49" long. Use the rule printed on the edge of this folder to measure the precise amount to cut off according to the cutting chart. You will then have the right whip length for the operating frequency.

Example: For 150 MHz operation measure 2-1/4" with rule from the base end and cut off. The remaining 46-3/4" will be correct for 150 MHz.

MEASURING THE ROD LENGTH — UHF ANTENNAS

The dimensions shown on the cutting chart are for the rod **below** the phasing coil. The rod **above** this coil is correct as it comes from the factory. **Do not change this upper rod.** The rod length indicated on the chart refers to the length of the rod from the bottom of the phasing coil to the end of the rod. Be sure to be precise for best results.



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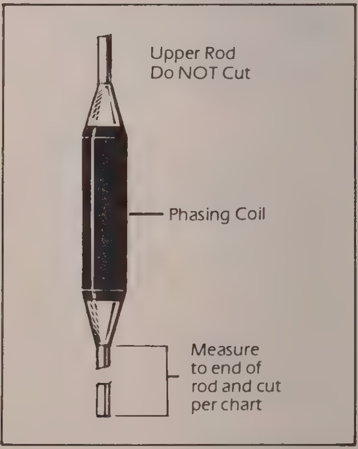


ALLIANCE TENNA ROTOR Model T-12

PARTS LIST

ROTATOR

Item No.	Description	Part No.	List Price
	Rotator Assembly	Z-5460-R	$18.65
1	Housing Ass'y R H	Y-5454-R	3.00
2	Housing Screws	10-32 x 3/4	*
3	Clamping Plate	X-5456-A	.65
4	Nut, Hex	1/4 x 20	*
5	Weather Shield	X-3375-B	.35
6	Shaft Assembly	Y-5463-S	3.90
**6	Shaft Assembly	Y-5463-T	3.90
7	Bearing Collar	X-3987-A	.10
8	Thrust Washer	X-3376-A	.20
9	U — Bolt	X-3377-A	.20
10	Mast Clamp	X-3319-A	.35
11	Nut, Hex	10-32	*
12	Worm Assembly	Y-5462-R	1.50
**12	Worm Assembly	Y-5462-S	1.50
13	Screw, R H Washer	8-32 x 3/8	*
14	Stop Slide	X-3320-A	.25
15	Motor & Term. Ass'y.	Y-5726-R	7.50
16	Nut, Hex	6-32	*
17	Mounting Plate Ass'y.	X-4263-R	.45
18	Screw, R H M	8-32 x 3/8	*
19	Spacers	X-4141-A	.10
20	Gear & Pinion Ass'y.	X-3373-R	.45
21	Hairpin Cotter	S-604-A	*
22	Terminal Plate	X-5700-R	.40
23	Screw, R H M	8-32 x 1	*
24	Screw, Binding Head	6-32 x 5/16	*
27	Contact Spring	X-8539-A	.05
28	Screw, Self-tapping	6-20 x 1/4	*
29	Lock Washer	X-2128-A	*

ROTATOR (Cont'd.)

Item No.	Description	Part No.	List Price
30	Housing Ass'y L H	Z-5326-B	$ 2.75
31	Gasket	X-5449-A	.06
32	Nut, Hex	8-32	*
33	Terminal Cover	Y-5327-A	.40
34	Nut	8-32	*
35	Strain Relief Clamp	X-3380-A	.10
36	Screw, R H M	6-32 x 1/2	*
37	Nut, Hex	6-32	*
38	Grommet	X-3387-B	.10
40	Potentiometer	Y-5725-R	1.50

CONTROL BOX

Item No.	Description	Part No.	List Price
	Control Box Complete	Z-5877-R	$19.00
101	Case	Z-5481-A	1.60
102	Window	Y-5485-A	.75
103	Control Bar	X-5484-A	.25
104	Foot Pads	X-5756-A	.05
105	Screw, R H M	6-32 x 1/4	*
106	Term. Strip Ass'y.	X-3803-S	.35
107	Capacitor	X-4098-B	1.90
108	Pivot Pin	X-5355-A	.15
109	Calibrating Resistor	X-4094-C	.95
110	Transformer	Y-5880-R	3.40
111	Switch Assembly	X-5864-S	.95
112	Insulating Strip	X-5351-A	.10
113	Meter & Panel Ass'y.	Y-5765-R	5.50
114	Panel Retainer	X-5495-A	.06
115	Potentiometer	X-8532-B	.80

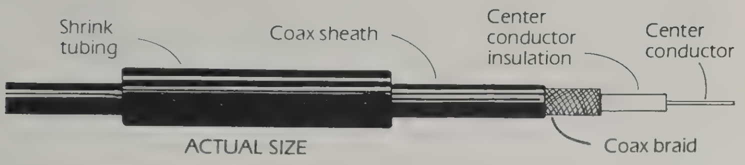
* Parts Packed 100 Per Package (Price $1.50 Per Pgk. Net)

** 1 RPM — Used on all T12 Rotors manufactured after June 1, 1958.
Serial Nos. T1122001 and over.

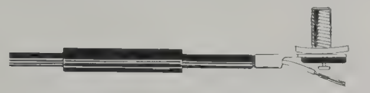
THE ALLIANCE MANUFACTURING CO., INC. • ALLIANCE, OHIO

LM PERMANENT MOUNTING INSTRUCTIONS

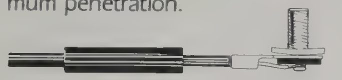
TO ATTACH COAX:



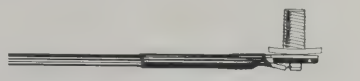
1 Slip supplied heat shrinkable tubing over RG58A/U coax cable. Trim to dimensions shown in actual size drawing above.



2 Insert cable into soldering terminal using a rotary motion for maximum penetration.



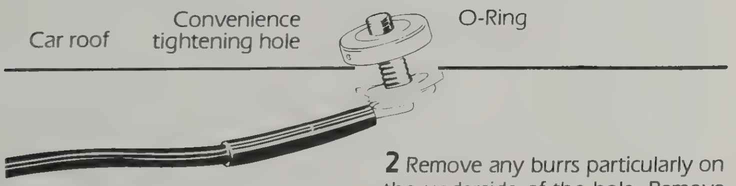
3 Attach center conductor to center stud and solder.



4 Push heat shrinkable tubing over terminal end and as far forward as possible. Rotate tubing and assembly for even heat distribution while holding a lighted match about 1 inch underneath. If tubing does not shrink evenly into place, continue process with another match.

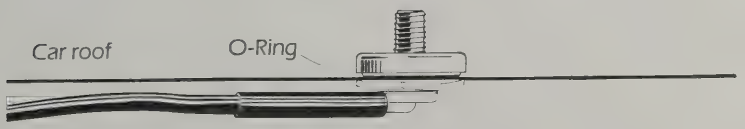
NOTE:
For a completely soldered connection lightly tin coax braid removing any excess solder. Route cable through end of terminal and apply soldering iron or gun to outside of terminal while exerting steady forward pressure on cable. Solder will suddenly melt and cable will slide into terminal end. Remove soldering iron quickly and allow the assembly to cool. Pass the inner cable conductor around the center stud in the groove provided and apply a small drop of solder.

TO ATTACH MOUNT:



1 Drill 3/4″ hole in body of vehicle at desired location. Remove padding or other thick material from inside at least 1/8″ from hole edge.

2 Remove any burrs particularly on the underside of the hole. Remove paint in a narrow ring around the hole. Metal to metal contact between the vehicle and mount is essential for best performance.



3 Route coax lead to equipment and slip Larsen mounting through hole as shown.

4 Insert small end of allen wrench into hole on side of insulator nut and use to tighten into place. On final turn make sure "O" ring gasket is in place and that center of insulator nut is centered in mounting hole. Reverse wrench with long end in hole for final tightening.

ATTACHING ANTENNA TO MOUNT

Place supplied rubber washer over antenna mount and screw loading coil base firmly against rubber washer.

ROD CUTTING CHARTS FOR LM SERIES ANTENNAS

QUARTER WAVE

Oper. Freq.	Rod Length (inches)	(cm.)
LMQ-52		
52 MHz	54-1/2″	138.43
54 MHz	54″	137.16
56 MHz	53-1/2″	135.89
58 MHz	52″	132.08
60 MHz	50-1/4″	127.635
62 MHz	48-1/4″	122 555
64 MHz	47″	119.38
66 MHz	45-1/2″	115.57
68 MHz	43-3/4″	111.125
70 MHz	42-1/2″	107.95
72 MHz	41-1/4″	104 775
74 MHz	40-1/4″	102 235
76 MHz	39-1/2″	100.33
78 MHz	38-1/2″	97.79
80 MHz	37-1/2″	95.25
82 MHz	36-1/2″	92.71
84 MHz	35-1/2″	90.17
86 MHz	34-1/2″	87.63
88 MHz	33-1/4″	84.46
LMQ-88		
88 MHz	33-1/4″	84.46
90 MHz	32-1/2″	82.55
92 MHz	31-3/4″	80.64
94 MHz	30-3/4″	78.105
96 MHz	29-3/4″	75.565
98 MHz	28-3/4″	73.025
100 MHz	28-3/8″	72.072
102 MHz	28″	71.12
104 MHz	27-1/4″	69.215
106 MHz	26-5/8″	67.627
108 MHz	26″	66.04
110 MHz	25-3/4″	65.405
112 MHz	25″	63.5
114 MHz	24-1/4″	61.595
116 MHz	24″	60.96
118 MHz	23-5/8″	60.0
120 MHz	23″	58.42
122 MHz	22-1/2″	57.15
124 MHz	22″	55.88
126 MHz	21-3/4″	55.245
128 MHz	21-3/8″	54.292
130 MHz	21-1/8″	53.657
132 MHz	21″	53.34
134 MHz	20-3/4″	52.705
136 MHz	20-1/4″	51.435
LMQ-		
140 MHz	20″	50.8
144 MHz	19-3/4″	50.165
150 MHz	19″	48.26
155 MHz	18-3/4″	47.625
158 MHz	18-3/8″	46.672
161 MHz	18-1/8″	46.037
164 MHz	17-5/8″	44.767
168 MHz	17″	43.18
172 MHz	16-3/4″	42.545
176 MHz	16-1/4″	41.275
400 MHz	6-7/8″	17.462
410 MHz	6-1/2″	16.51
420 MHz	6-3/8″	16.192
430 MHz	6-1/4″	15.875
440 MHz	6″	15.24
450 MHz	5-3/4″	14.605
460 MHz	5-9/16″	14.127
470 MHz	5″	12.7
480 MHz	4-7/8″	12.382
490 MHz	4-3/4″	12.066
500 MHz	4-5/8″	11.747

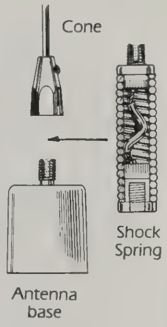
HIGH BAND

For LM-150 antennas mfg. w/o provision for spring.

Oper. Freq.	Rod Length (inches)	(cm.)
144-174 MHz Range		
144 MHz	49″	124.46
146 MHz	48-3/4″	123.825
148 MHz	48-1/2″	123.19
150 MHz	46-3/4″	118.745
152 MHz	46″	116.84
154 MHz	45-1/2″	115.57
156 MHz	45″	114.30
158 MHz	44″	111.760
160 MHz	43-1/4″	109.855
162 MHz	42-3/4″	108.585
164 MHz	42″	106.680
166 MHz	41-1/4″	104 775
168 MHz	40-3/4″	103.505
170 MHz	40″	101.60
172 MHz	39-1/2″	100.330
174 MHz	39″	99.060
200-265 MHz Range		
200 MHz	37-1/2″	95.250
205 MHz	36-1/2″	92.710
210 MHz	35″	88.90
215 MHz	33-3/4″	85.725
220 MHz	32″	81.280
225 MHz	31″	78.740
230 MHz	30″	76.20
235 MHz	29-1/2″	74.930
240 MHz	29″	73.660
245 MHz	28″	71.120
250 MHz	27-1/4″	69.215

New LM-150 Antennas with Shock Spring Option

This cutting chart applies only to LM-150 antennas designed to accept a shock spring. Note these antenna elements now come with a metal cone that screws either directly on the base or on the shock spring (see adjacent drawing). The cutting lengths are based on inserting the rod as far as possible into the spring or base loading coil. This gives the user approximately 3/4″ of adjustment in case the rod was inadvertently cut too short.



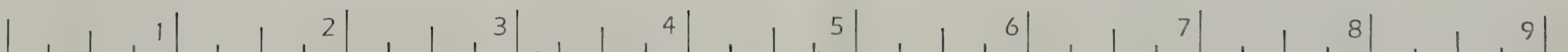
Oper. Freq.	W/O Spring (inches)	(cm.)	With Spring (inches)	(cm.)
144-174 MHz Range				
144 MHz	49″	124.46	45-3/4″	116.21
146 MHz	48-1/2″	123.19	45″	114.30
148 MHz	47-1/2″	120.65	44-1/4″	112.40
150 MHz	46-3/4″	118.75	43-1/4″	109.86
152 MHz	45-3/4″	116.21	42-1/4″	107.32
154 MHz	45″	114.30	41-1/2″	105.41
156 MHz	44-1/2	113.03	40-3/4″	103.51
158 MHz	43-3/4″	111.13	40″	101.60
160 MHz	42-3/4″	108.59	39-1/2″	100.33
162 MHz	42″	106.68	38-1/2″	97.79
164 MHz	41-1/2″	105.41	37-3/4″	95.89
166 MHz	40-3/4″	103 51	37″	93.98
168 MHz	40-1/4″	102.24	36-3/8″	92.39
170 MHz	39-1/2″	100.33	35-3/4″	90.81
172 MHz	39″	99.06	35″	88.90
174 MHz	38-1/4″	97.16	34-1/4″	86.995

UHF BAND

Oper. Freq.	W/O Spring (inches)	(cm.)	With Spring (inches)	(cm.)
406-420 MHz Range				
405 MHz	10″	25.4	8-5/8″	21.907
410 MHz	9-5/8″	24 447	8-1/8″	20 637
415 MHz	9-1/8″	23.177	7-5/8″	19.367
420 MHz	8-5/8″	21.907	7-1/4″	18.415
420-440 MHz Range				
420 MHz	10-1/8″	25.717	8-3/4″	22 225
425 MHz	9-5/8″	24.447	8-3/8″	21.272
430 MHz	9-1/4″	23.495	8″	20.32
435 MHz	8-3/4″	22.225	7-5/8″	19.367
440 MHz	8-5/8″	21.907	7-1/2″	19.05
440-460 MHz Range				
440 MHz	11-1/8″	28 257	9-3/8″	23 812
445 MHz	10-3/4″	27.305	9″	22.86
450 MHz	10-3/8″	26.352	8-5/8″	21.907
455 MHz	10″	25.4	8-1/4″	20.955
460 MHz	9-1/2″	24.13	7-3/4″	19.685
450-470 MHz Range				
450 MHz	10-5/8″	26.987	8-7/8″	22.542
455 MHz	10″	25.4	8-1/4″	20.955
460 MHz	9-3/4″	24.765	7-7/8″	20.00
465 MHz	9-1/4″	23.495	7-1/2″	19.05
470 MHz	8-3/8″	21.272	7″	17.78
470-490 MHz Range				
470 MHz	9-3/4″	24.765	8″	20.32
475 MHz	9-3/8″	23.812	7-3/8″	18.732
480 MHz	9″	22.86	7″	17.78
485 MHz	8-5/8″	21.907	6-5/8″	16.827
490 MHz	8-1/4″	20.955	6-1/4″	15.875
490-512 MHz Range				
490 MHz	9-1/8″	23.177	7-1/8″	18.097
495 MHz	8-3/4″	22.225	6-3/4″	17.145
500 MHz	8-1/4″	20.955	6-3/8″	16.192
505 MHz	8″	20.32	6″	15.24
512 MHz	7-5/8″	19.367	5-3/4″	14.605

800 MHz Band

Larsen 800 MHz antennas are cut to be resonant at 805-855 MHz.
No further cutting is necessary.



ALLIANCE TENNA ROTOR Model T-12

PARTS LIST

ROTATOR

Item No.	Description	Part No.	List Price
	Rotator Assembly	Z-5460-R	$18.65
1	Housing Ass'y R H	Y-5454-R	3.00
2	Housing Screws	10-32 x 3/4	*
3	Clamping Plate	X-5456-A	.65
4	Nut, Hex	1/4 x 20	*
5	Weather Shield	X-3375-B	.35
6	Shaft Assembly	Y-5463-S	3.90
**6	Shaft Assembly	Y-5463-T	3.90
7	Bearing Collar	X-3987-A	.10
8	Thrust Washer	X-3376-A	.20
9	U — Bolt	X-3377-A	.20
10	Mast Clamp	X-3319-A	.35
11	Nut, Hex	10-32	*
12	Worm Assembly	Y-5462-R	1.50
**12	Worm Assembly	Y-5462-S	1.50
13	Screw, R H Washer	8-32 x 3/8	*
14	Stop Slide	X-3320-A	.25
15	Motor & Term. Ass'y.	Y-5726-R	7.50
16	Nut, Hex	6-32	*
17	Mounting Plate Ass'y.	X-4263-R	.45
18	Screw, R H M	8-32 x 3/8	*
19	Spacers	X-4141-A	.10
20	Gear & Pinion Ass'y.	X-3373-R	.45
21	Hairpin Cotter	S-604-A	*
22	Terminal Plate	X-5700-R	.40
23	Screw, R H M	8-32 x 1	*
24	Screw, Binding Head	6-32 x 5/16	*
27	Contact Spring	X-8539-A	.05
28	Screw, Self-tapping	6-20 x 1/4	*
29	Lock Washer	X-2128-A	*

ROTATOR (Cont'd.)

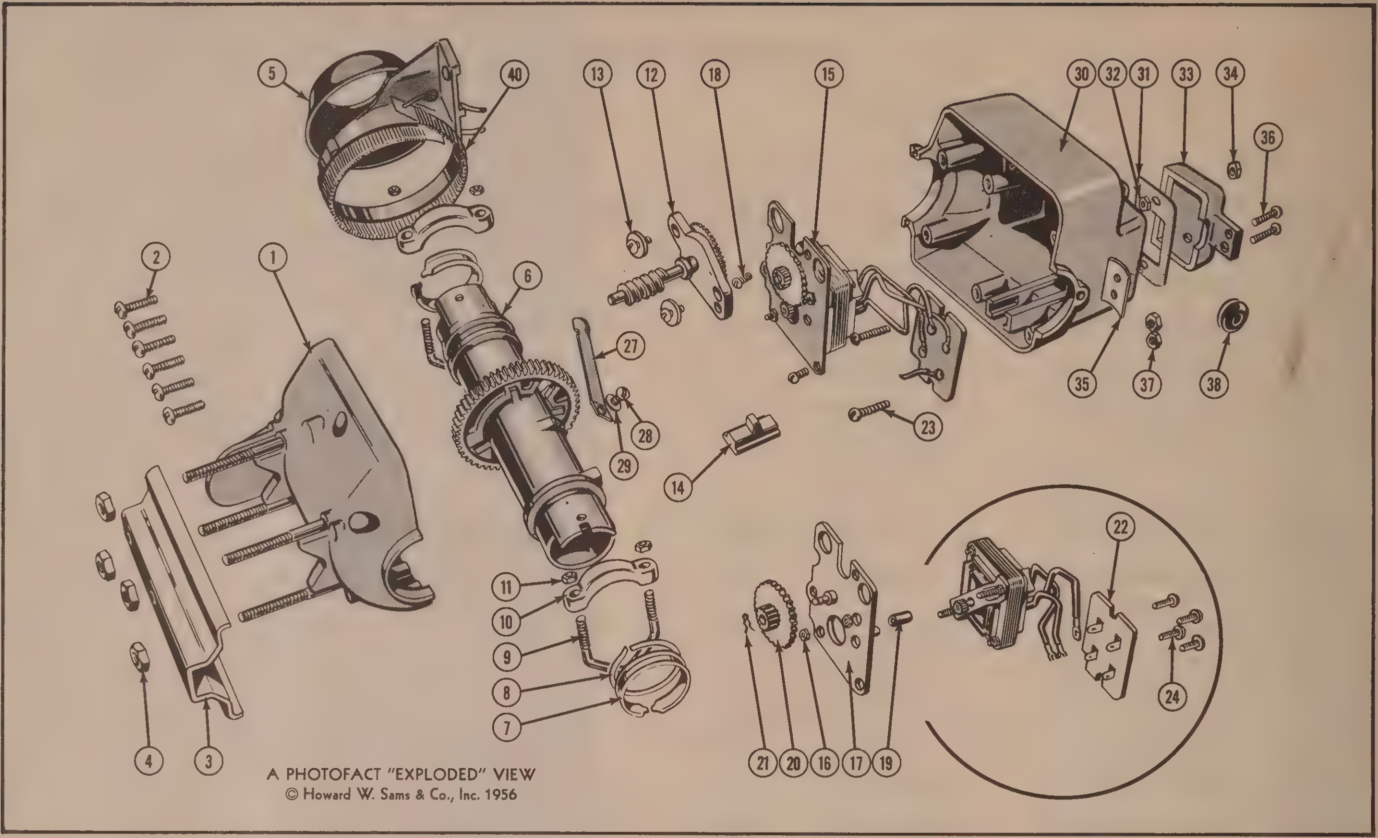
Item No.	Description	Part No.	List Price
30	Housing Ass'y L H	Z-5326-B	$ 2.75
31	Gasket	X-5449-A	.06
32	Nut, Hex	8-32	*
33	Terminal Cover	Y-5327-A	.40
34	Nut	8-32	*
35	Strain Relief Clamp	X-3380-A	.10
36	Screw, R H M	6-32 x 1/2	*
37	Nut, Hex	6-32	*
38	Grommet	X-3387-B	.10
40	Potentiometer	Y-5725-R	1.50

CONTROL BOX

Item No.	Description	Part No.	List Price
	Control Box Complete	Z-5877-R	$19.00
101	Case	Z-5481-A	1.60
102	Window	Y-5485-A	.75
103	Control Bar	X-5484-A	.25
104	Foot Pads	X-5756-A	.05
105	Screw, R H M	6-32 x 1/4	*
106	Term. Strip Ass'y.	X-3803-S	.35
107	Capacitor	X-4098-B	1.90
108	Pivot Pin	X-5355-A	.15
109	Calibrating Resistor	X-4094-C	.95
110	Transformer	Y-5880-R	3.40
111	Switch Assembly	X-5864-S	.95
112	Insulating Strip	X-5351-A	.10
113	Meter & Panel Ass'y.	Y-5765-R	5.50
114	Panel Retainer	X-5495-A	.06
115	Potentiometer	X-8532-B	.80

* Parts Packed 100 Per Package (Price $1.50 Per Pgk. Net)

** 1 RPM — Used on all T12 Rotors manufactured after June 1, 1958.
Serial Nos. T1122001 and over.



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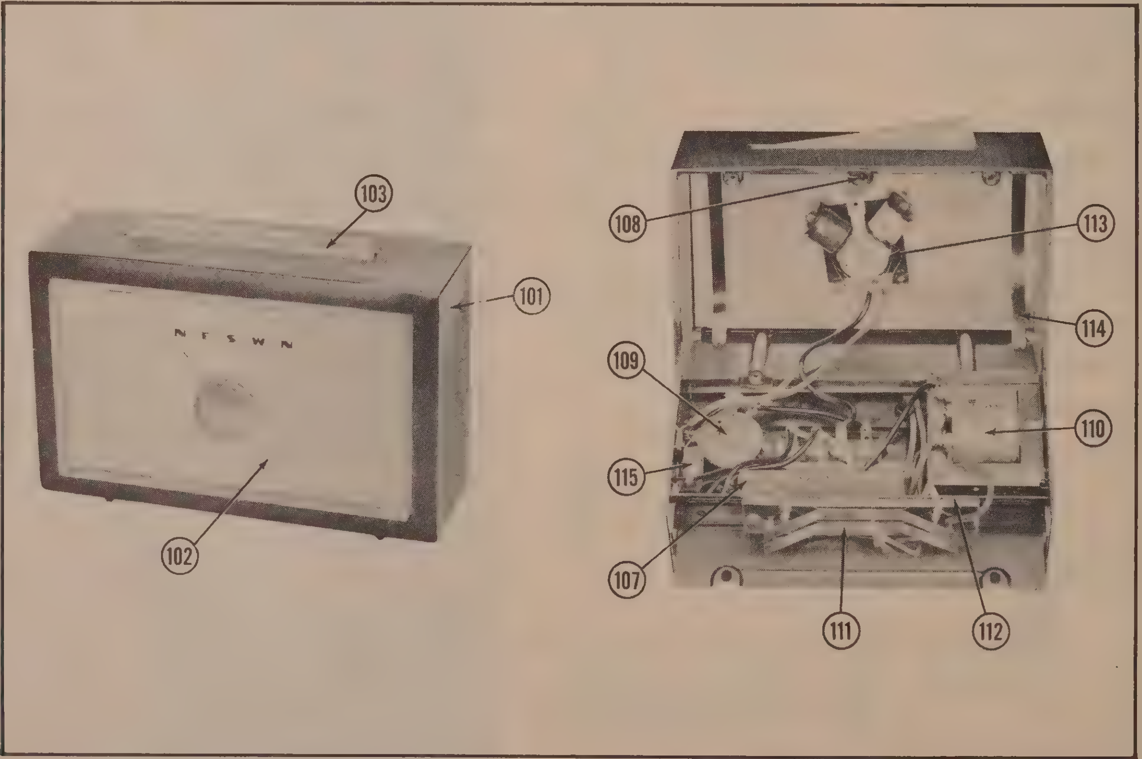
Exploded View of Rotator Unit.



Control Box.

ALLIANCE TENNA ROTOR Model K-22

PARTS LIST

ROTATOR

Item No.	Description	Part No.	List Price
	Rotator Assembly	Z-5450-R	$14.47
1	Housing Ass'y. R H	Y-5454-R	3.00
2	Housing Screws	10-32 x 3/4	*
3	Clamping Plate	X-5456-A	.65
4	Nut, Hex	1/4 x 20	*
5	Weather Shield	X-3375-A	.35
6	Shaft Assembly	Y-5463-S	3.90
**6	Shaft Assembly	Y-5463-T	3.90
7	Bearing Collar	X-3987-A	.10
8	Thrust Washer	X-3376-A	.20
9	U — Bolt	X-3377-A	.20
10	Mast Clamp	X-3319-A	.35
11	Nut, Tex	10-32	*
12	Worm Assembly	Y-5462-R	1.50
**12	Worm Assembly	Y-5462-C	1.50
13	Screw, R H Washer	8-32 x 3/8	*
14	Stop Slide	X-3320-A	.25
15	Motor & Term. Ass'y.	Y-5451-S	8.00
16	Nut, Hex	6-32	*
17	Mounting Plate Ass'y.	X-4263-R	.45
18	Screw, R H M	8-32 x 3/8	*
19	Spacers	X-4141-A	.10
20	Gear & Pinion Ass'y.	X-3373-R	.45
21	Hairpin Cotter	S-604-A	*
22	Terminal Plate	X-4253-A	.30
23	Screw, R H M	8-32 x 1	*
24	Bolt, Carriage	8-32 x 5/8	*
25	Nut, Hex	8-32	*

ROTATOR (Cont'd.)

Item No.	Description	Part No.	List Price
26	Washer	#8	*
27	Contact Spring	X-3358-A	$ .10
30	Housing Ass'y. L H	Z-5326-B	2.75
31	Gasket	X-5449-A	.06
32	Nut, Hex	8-32	*
33	Terminal Cover	Y-5327-A	.40
34	Nut	8-32	*
35	Strain Relief Clamp	X-3380-A	.10
36	Screw, R H M	6-32 x 1/2	*
37	Nut, Hex	6-32	*
38	Grommet	X-3387-B	.10

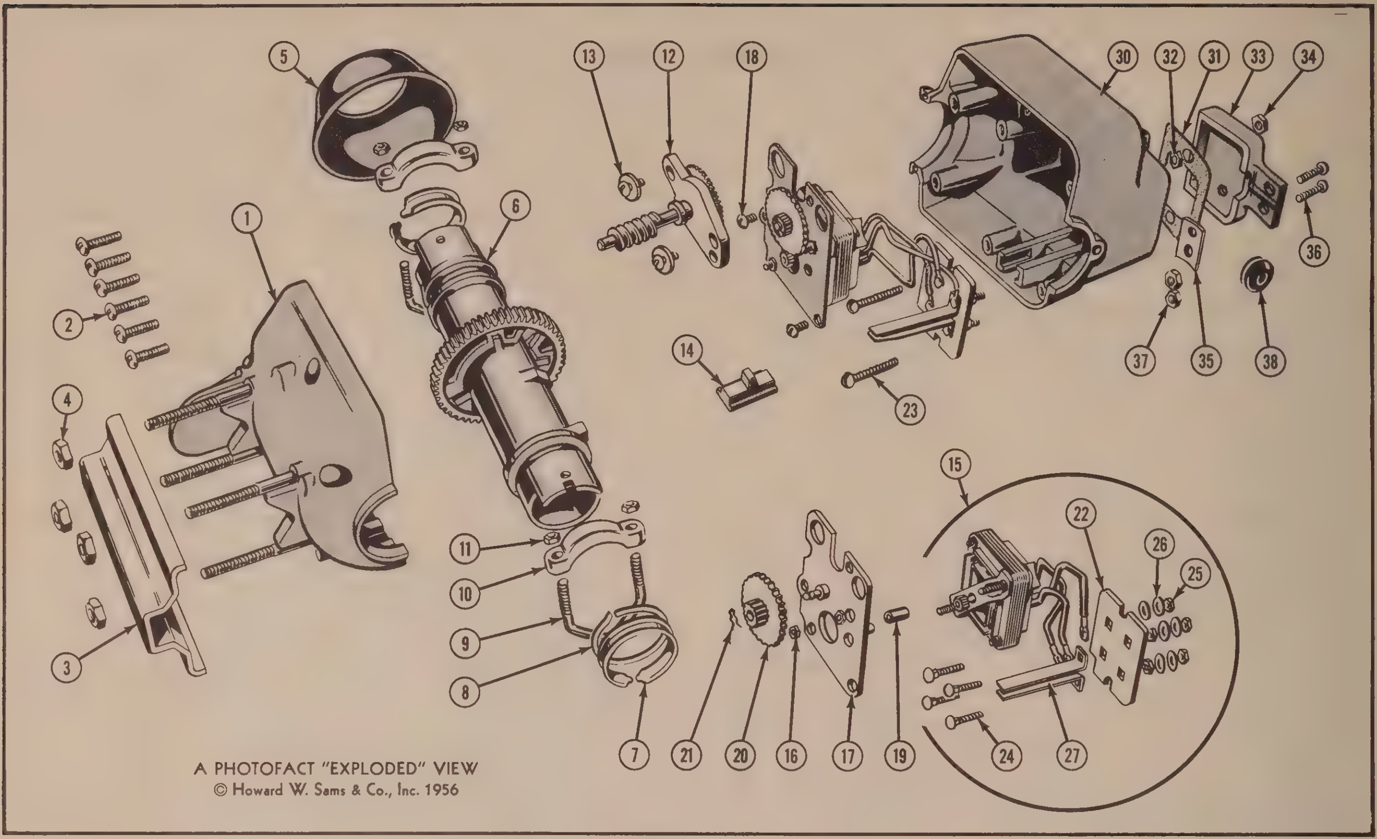
CONTROL BOX

Item No.	Description	Part No.	List Price
	Control Box Complete	Z-5859-R	$12.65
101	Case	Z-5836-A	1.10
102	Medallion	X-5858-A	.30
103	Control Bar	X-5484-A	.25
104	Bumper	X-5628-A	.05
105	Screw, Self-tapping	6-20 x 1/2	*
106	Term. Strip Ass'y.	X-3803-S	.35
107	Capacitor	X-4098-A	1.80
108	Light Socket Ass'y.	Y-5558-R	.20
109	Bulb (Type 47)	X-4274-A	.25
110	Transformer	Y-5849-R	3.30
111	Switch Assembly	X-5864-R	.95
112	Insulating Strip	X-5351-A	.10

* Parts Packed 100 Per Package (Price $1.50 Per Pgk. Net)

** 1 RPM Parts — Used on all K22 Rotors manufactured after June 1, 1958.
Serial Nos. K54001 and over.

ALLIANCE TENNA ROTOR Model K-22



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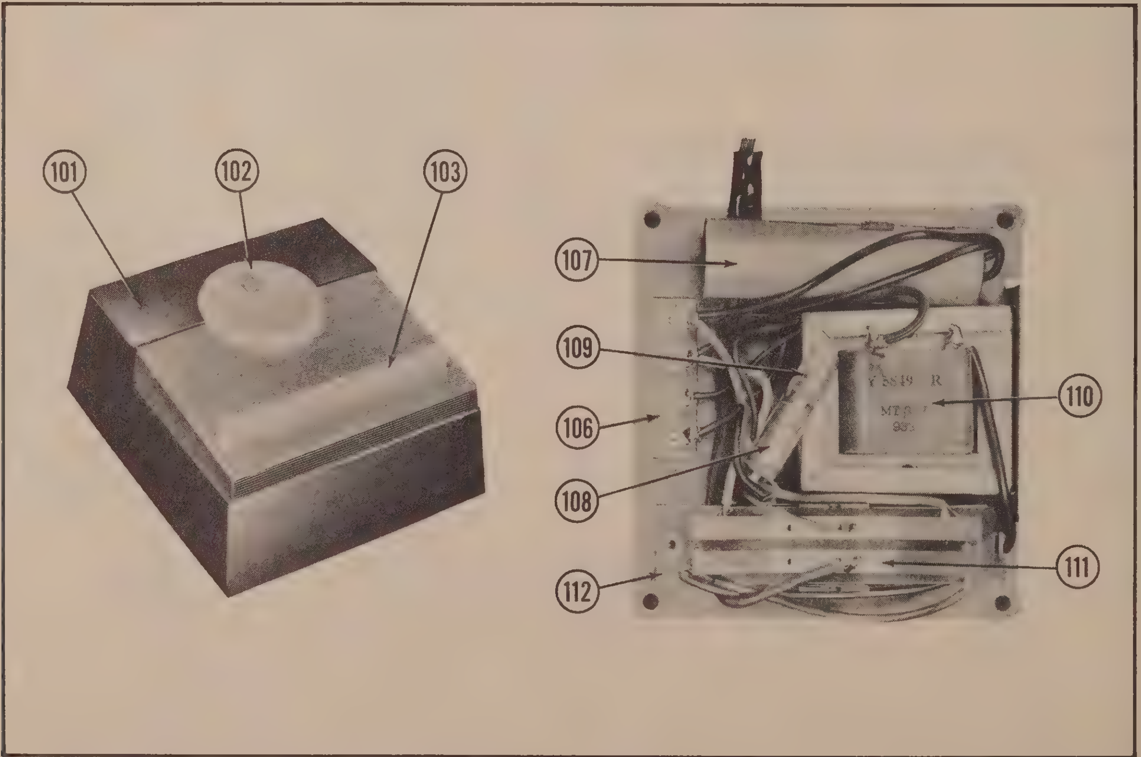
Exploded View of Rotator Unit.



Control Box.

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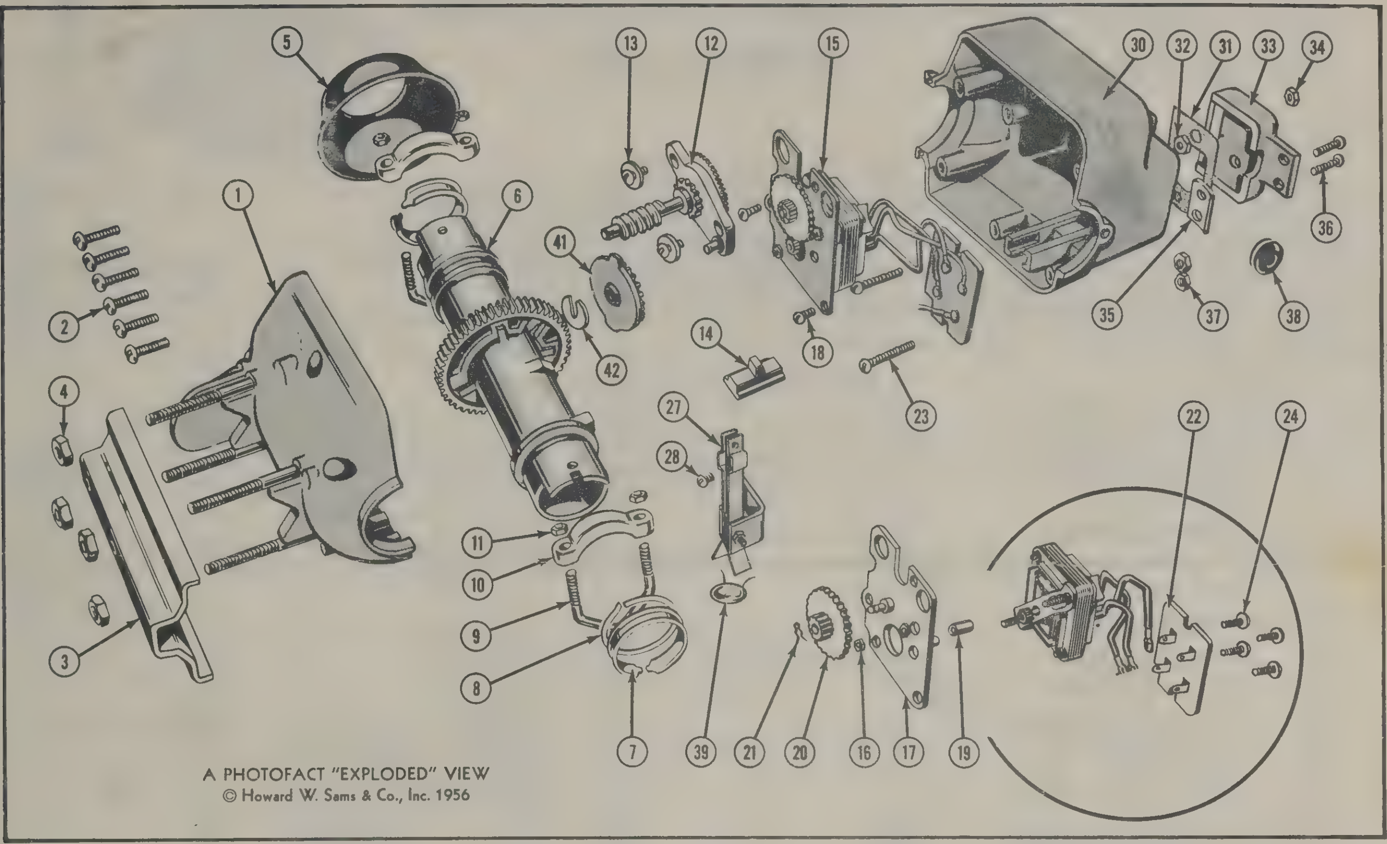
ALLIANCE TENNA ROTOR Model U-98



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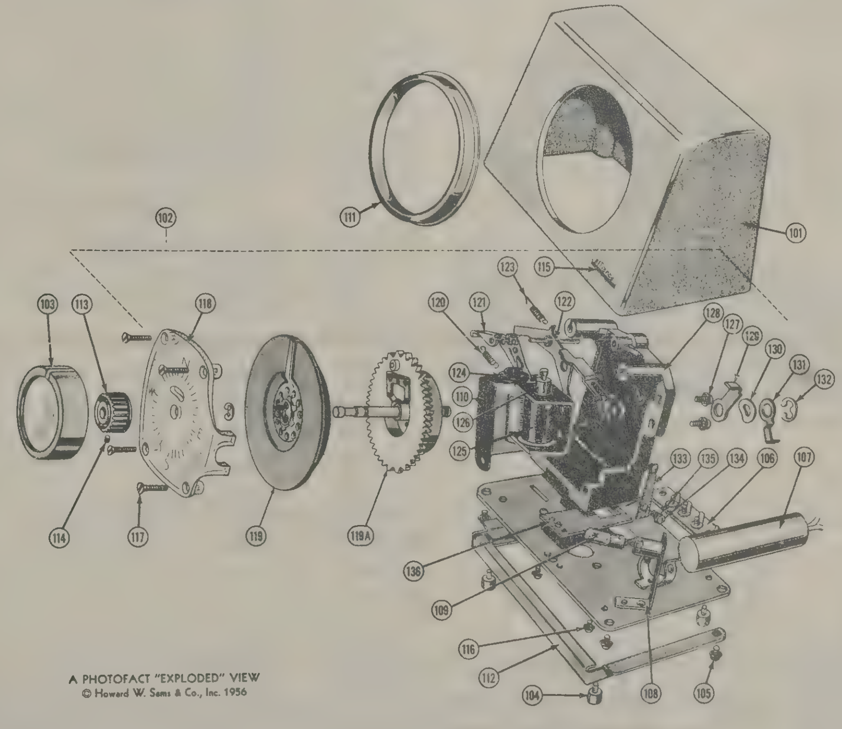
Exploded View of Rotator Unit.



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Exploded View of Control Box.

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ALLIANCE TENNA ROTOR Model U-98

PARTS LIST

ROTOR

Item No.	Description	Part No.	List Price
	Rotor Complete	5471-R	$25.00
✓1	Housing Ass'y. R H	5454-R	3.15
2	Housing Screws	10-32 x 3/4	*
3	Clamping Plate	5456-A	70
4	Nut, Hex	1/4 x 20	*
5	Weather Shield	3375-C	.40
6	Shaft Assembly	5463-S	4.10
**6	Shaft Assembly	5463-T	4.10
✓7	Bearing Collar	3987-A	.12
✓8	Thrust Washer	3376-A	.22
9	U — Bolt	3377-A	.25
10	Mast Clamp	3319-A	.38
11	Nut, Hex	10-32	*
12	Worm Assembly	5474-R	1.90
**12	Worm Assembly	5474-S	1.90
13	Screw, R H Washer	8-32 x 3/8	*
14	Stop Slide	3320-A	.27
15	Motor & Term. Ass'y.	5714-S	8.50
16	Nut, Hex	6-32	*
17	Mounting Plate Ass'y.	4263-R	.50
18	Screw, R H M	8-32 x 3/8	*
19	Spacers	4141-A	.12
20	Gear & Pinion Ass'y.	3373-R	.50
21	Hairpin Cotter	604-A	*
22	Terminal Plate	5700-R	.42
23	Screw, R H M	8-32 x 1	*
24	Screw, Binding Head	6-32 x 5/16	*
27	Contact Switch Ass'y.	5908-R	.63
28	Screw, R H M	6-32 x 3/16	*
30	Housing Ass'y. L H	5326-B	3.00
31	Gasket	5449-A	.08
32	Nut, Hex	8-32	*
33	Terminal Cover	5327-A	.50
34	Nut	8-32	*
35	Strain Relief Clamp	3380-A	.12
36	Screw, R H M	6-32 x 1/2	*
37	Nut, Hex	6-32	*
38	Grommet	3387-B	.12
39	Capacitor	8533-B	.25
41	Cam & Gear	5584-B	.25
**41	Cam & Gear	4292-B	.25
42	Spring Clip	2825-A	*

CONTROL

Item No.	Description	Part No.	List Price
	Control Complete	8515-R	$26.95
101	Case	5559-A	2.50
102	Frame & Dial Ass'y.	8516-R	11.80
103	Knob	5556-R	.95
104	Bumper	5628-A	.07
105	Screw, R H Washer	8-32 x 3/8	*
106	Term. Strip Ass'y.	3803-S	.40
107	Capacitor	4098-A	1.80
108	Light Socket Ass'y.	5558-R	.22
109	Bulb (Type 47)	4274-A	.30
110	Transformer	5512-A	3.78
111	Bezel	8525-B	.55
112	Trim Strip	8528-A	.42
113	Knob Hub	5555-A	.42
114	Set Screw	614-N	*
115	Emblem	8530-A	.17
116	Screw Self-tapping	6-20 x 1/2	*
117	Screw Self-tapping	6-20 x 5/8	*
118	Dial	8519-A	.95
119	Spring Motor & Hub Assembly	8534-R	3.45
119A	Detent Body Ass'y.	5524-R	7.35
120	Pawl Spring	5667-A	.12
121	Pawl	8518-A	.22
122	Pawl Lifter Ass'y.	8512-R	.35
123	Spring Tension	8520-A	.12
124	Grommet	8509-A	.07
125	Solenoid Assembly	8511-R	1.50
126	Plunger	8504-A	.40
127	Screw, Hex H Washer	6-32 x 1/2	*
128	Frame Assembly	5515-S	1.55
129	Stop Lever	5537-A	.07
130	Spring Washer	5568-A	.07
131	Terminal	5540-A	.07
132	Retaining Ring	4243-B	.10
133	Indent Spring Ass'y.	5518-R	.32
134	Screw, R H M	6-32 x 3/8	*
135	Washer	5/16	*
136	Tuning Spring	5563-A	.12

* Parts Packed 100 Per Package (Price $2.00 Per Pgk. Net)

** 1 R P M Parts — Used on all U98 Rotors manufactured after June 1, 1958.
Serial Nos. U840501 and over.

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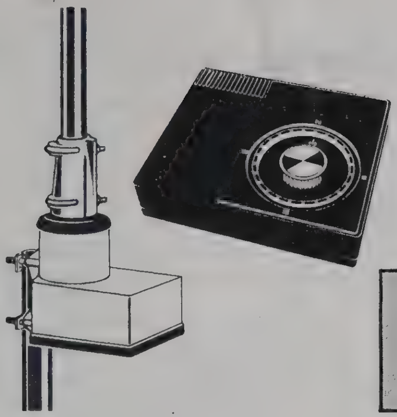


ARCHEROTOR®

Catalog Number: 15-1225A

CAUTION: Read all of the **IMPORTANT SAFEGUARDS** contained elsewhere in this booklet, as well as all safety, installation and operating instructions supplied with this unit, and with your antenna, before installing or operating. Retain this booklet and all instructions for your safety and future reference.

GENERAL DESCRIPTION

Your Archerotor is designed to turn and accurately position even the largest TV antennas, assuring the best possible TV picture reception. Rotation of the drive unit is synchronized with the position of the moving dot of the control unit. This is accomplished by use of highly accurate synchronous motors.

The connecting cable between the control unit and the drive unit carries only safe, low voltage power. When the operating cycle is complete, the unit shuts off automatically and draws no current until it is again activated by turning the control knob.

INSTALLATION INSTRUCTIONS

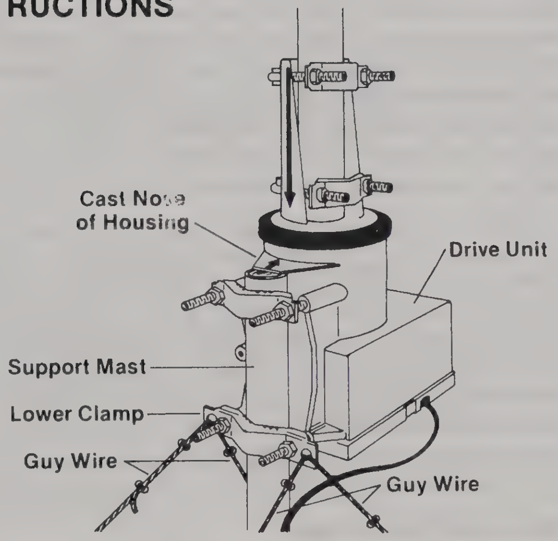
IMPORTANT NOTE: Before mounting drive unit on the support mast, connect drive unit to control unit with the control cable and perform the function shown in paragraph 7.

① DRIVE UNIT MOUNTING

If not mounted inside a tower, attach the drive unit to the support mast by loosening the nuts enough to get the clamps over the mast. Lower the drive unit until the cast nose of the drive housing sits on top of the support mast and tighten the nuts. Moderate tightening of the nuts with a 7/16" wrench will cause the teeth to grip the mast securely. Do not overtighten to the point that you deform the mast, since this will reduce its strength.

Mast diameters of 1¼" to 2" (3-5cm) may be used. The 1½" (3.8cm) size or larger is recommended for unguyed masts over 6' long, or where large antennas are used.

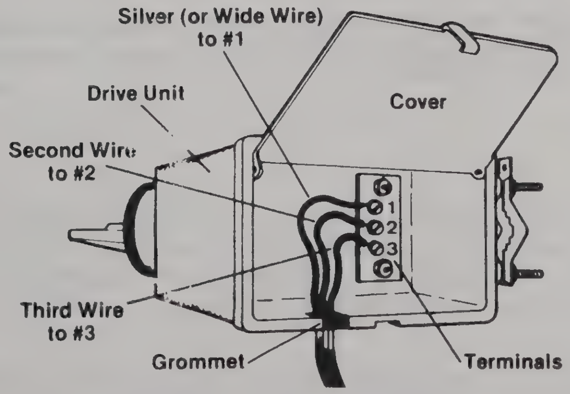
If guy wires are used, fasten two through each of the two holes of the lower clamp.



CAUTION: Select a mounting location where the antenna cannot come in contact with power lines while it is being installed, and where the installation will not fall across power lines if a guy wire should fail.

② DRIVE UNIT CONNECTION

Up to 280' (84 m) of 20 AWG 3 conductor cable may be used. For longer runs, use heavier gage wire. To attach cable to the drive unit, snap open the cover using a coin or screw driver and connect the cable as shown. Remove the grommet and insert the cable thru the slot. Press the grommet back into the housing. Separate leads for 1½" (4cm) and strip off the insulation for ½". Find the silver or wide jacketed lead and connect it to Terminal 1. Connect the adjacent lead to Terminal 2, and the next lead to Terminal 3. If 4 wire cable is used, connect both wire 3 and 4 to Terminal 3. Make sure there are no loose strands which can short between terminals. Recheck the wiring order and securely close the cover. *To avoid moisture collecting in the cable be sure jacket of cable passes thru the grommet.*



CUSTOM MANUFACTURED FOR

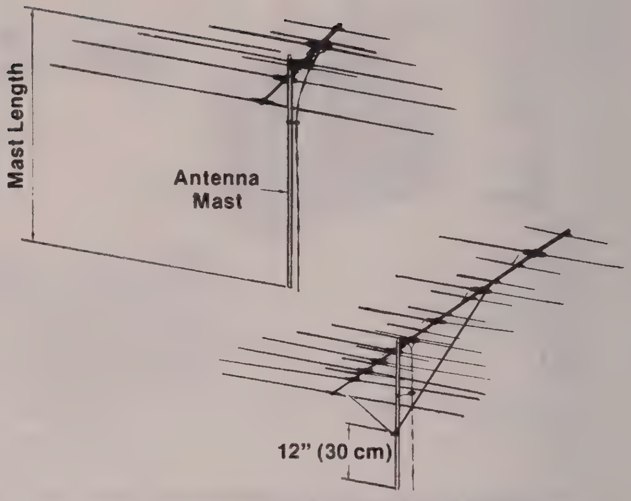
RADIO SHACK A DIVISION OF TANDY CORPORATION

③ ANTENNA MAST

Antennas should be mounted close to the drive unit. Cut 1-¼" (3cm) antenna mast to a length not exceeding that shown below and mount the antenna at the top of the mast. Attach transmission line to the antenna.

Antenna Size	Maximum Mast Length
Small (up to 5' (1,5 m) long)	5 feet (1,5 m)
Medium (up to 8' (2,4 m) long)	3 feet (0,9 m)
Large (over 8' (2,4 m) long)	2 feet (0,6 m)
Large with Braces	See Note
Two Antennas*	4 feet (1,2 m)

Note: Cut antenna mast 12" (30 cm) longer than distance needed to mount antenna and brace.



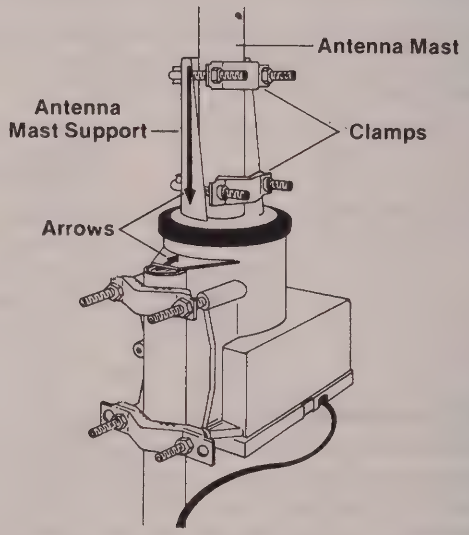
Large Antenna with Braces

---

* Mount small antenna at top, larger antenna 12" from bottom.

④ ANTENNA MOUNTING

The arrow of the antenna mast support and housing must be aligned. If not, turn the knob of the control until the arrow of the antenna mast support is in the position shown in the sketch. Loosen the clamps of the mast support enough to accept the antenna mast. Insert the antenna mast between the clamps and the mast support. The end of the antenna mast must sit on the bottom of the mast support. Rotate the antenna mast until the antenna points south and tighten the nuts. *Excessive overtightening of the clamp nuts will weaken the antenna mast without adding any more clamping action.*

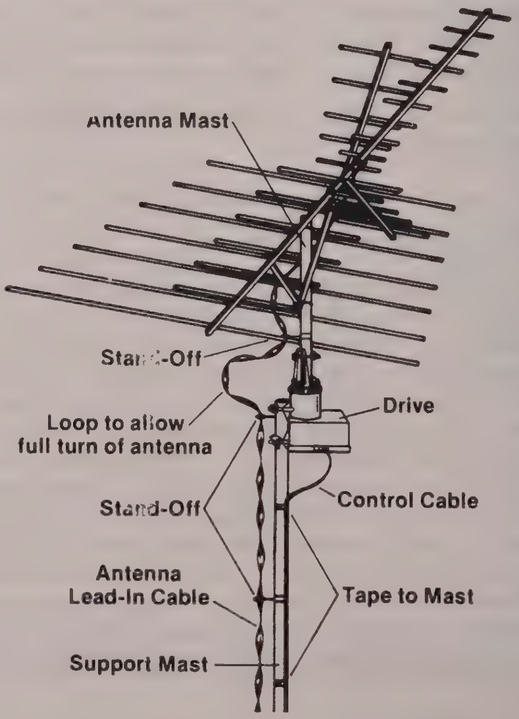


In some instances, where desired stations are predominantly in a northerly direction, it may be desirable to point the antenna north in order to avoid having the rotator operating near its end stops. If this is the case, point the antenna north instead of south when arrows are aligned. If this is done, please note that the antenna is pointing in the opposite direction from that indicated on the control. For example; When the control is pointing to North the antenna will be pointing South and when the control is pointing to East the antenna will be pointing West. Using channel markers as described in Step 9 will help to eliminate confusion.

⑤ CABLE INSTALLATION

After connecting the antenna lead-in cable to the antenna fasten it to the antenna mast using stand-off insulators as shown. Provide a generous loop at the drive unit and attach lead-in cable to the support mast with stand-off insulators approximately every four feet. Tape the rotator control cable directly to the support mast.

Note: See Step 1 of the Important Safeguards Section for Grounding of Control Cable and Lead-In Cable for Lightning Protection.



⑥ CONTROL UNIT CONNECTION

Prepare the end of the lead-in cable as shown. Run the cable through the strain relief channel on the underside of the control unit and connect to the terminals in proper order. The wide or silver wire is to be connected to Terminal 1 as on the drive unit. The next wire is connected to Terminal 2, and the next lead to Terminal 3. If 4 wire cable is used, connect both wire 3 and 4 to Terminal 3.

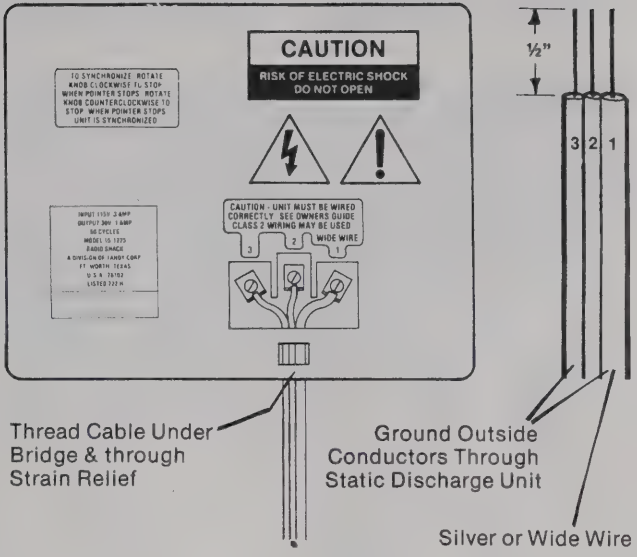
Tighten all the terminal screws after rechecking the wiring order and making sure there are no loose strands that could short between terminals.

Improper connections will result in incorrect operation of the units or permanent damage.

Important: Number 1 terminal on the drive and control units must be connected to each other, as must Terminal 2 and Terminal 3.

⚡ The lightning symbol indicates the presence of uninsulated "Dangerous Voltage" within the product's enclosure that may constitute a risk of electric shock.

⚠ The exclamation point indicates the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.


TO SYNCHRONIZE ROTATE KNOB CLOCKWISE TO STOP WHEN POINTER STOPS ROTATE KNOB COUNTERCLOCKWISE TO STOP WHEN POINTER STOPS UNIT IS SYNCHRONIZED
CAUTION
RISK OF ELECTRIC SHOCK DO NOT OPEN
INPUT 115V .3 AMP
OUTPUT 30V 1 AMP
60 CYCLES
MODEL 15 1225
RADIO SHACK
A DIVISION OF TANDY CORP
FT WORTH TEXAS
U S A 76102
LISTED 722 H
CAUTION - UNIT MUST BE WIRED CORRECTLY SEE OWNERS GUIDE CLASS 2 WIRING MAY BE USED
3
2
WIDE WIRE
1
½"
3
2
1
Thread Cable Under Bridge & through Strain Relief
Ground Outside Conductors Through Static Discharge Unit
Silver or Wide Wire

Terminal Connections

Silver or Wide Wire to #1
Wire #2 to #2
Wire #3 to #3

CAUTION: To reduce the risk of electric shock, do not remove cover. No userserviceable parts inside. Refer servicing to qualified service personnel.

---

⑦ TESTING

With drive and control units properly wired together, plug control into proper A.C. outlet after checking voltage and cycle data on underside of control. Do not use D.C. Turn the control knob fully clockwise. The dot of the indicator disc will start moving clockwise. The low sound of the running motor will be heard from the control unit. When the antenna reaches the end of rotation, the control unit dot will stop moving and the unit will automatically switch off. Repeat this procedure turning the knob fully counterclockwise. When the dot reaches the north position and switches off, the control unit and drive unit are synchronized. Turn control knob to south 'S' to align arrows of drive unit for correct antenna installation.

⑧ RESYNCHRONIZATION

Should the antenna position move out of synchronization with the control unit indicator dot, turn the knob clockwise against the north end of the rotation stop. Wait until the dot stops moving and then turn the knob counterclockwise against the north stop. When the dot stops moving, units are synchronized. This procedure can be repeated whenever needed.

⑨ USE OF CHANNEL MARKERS

With units synchronized as above, turn the control knob to the position of best reception for each desired TV channel. Remove the appropriately numbered channel marker from the label provided and place it on the control dial face at the knob position selected for the best reception of each TV channel.

⑩ OPERATING INSTRUCTIONS

To rotate the antenna, turn the control knob to the desired reception direction. While the antenna is rotating, the indicator dot will move, indicating the direction of antenna rotation. When the antenna reaches the selected direction, it will automatically stop. Do not force the knob beyond the end of rotation stops. The rotation of the antenna may be stopped at any time by reversing the original direction of knob rotation just far enough to cause the dot to stop and the control unit to shut off.

When locating the direction of a station for the first time, rotate the antenna several times through the point of best reception. The *correct* direction can then be noted for future reference by placing the appropriate channel marker on the dial face at this position. If there is reason to believe that the antenna and control unit are not tracking together, it may be necessary to synchronize the system. (See Step 8 - Resynchronization)

IMPORTANT SAFEGUARDS

Your antenna rotator unit, consisting of a control and a drive, has been engineered and manufactured to assure your personal safety, but improper installation or abuse of this unit, or the antenna connected to it, can result in potential electrical shock or fire hazards. In order not to defeat the safeguards incorporated in this unit, observe the following basic rules for its installation, use and servicing.

1. Be sure the outside antenna system is grounded to provide some protection against voltage surges and built up static charges. Section 810 of the National Electrical Code, NFPA No. 70 - 1978, or CSA C22.1 of the Canadian Electrical Code provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to a static discharge unit (also known as "lightning arrestor"), size of grounding conductors, location of static discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See figure 1.
   a. Use No. 10 AWG or larger copper, No. 8 AWG or larger aluminum, or No. 17 AWG or larger copper-clad steel or bronze wire as ground wires.
   b. Secure cables from antenna to static discharge units and mast ground wire to house with stand-off insulators, spaced from 4 feet (1.22 meters) to 6 feet (1.83 meters) apart.
   c. Mount static discharge units as close as possible to where cables enter house. Do not locate near combustible materials or in a hazardous location.

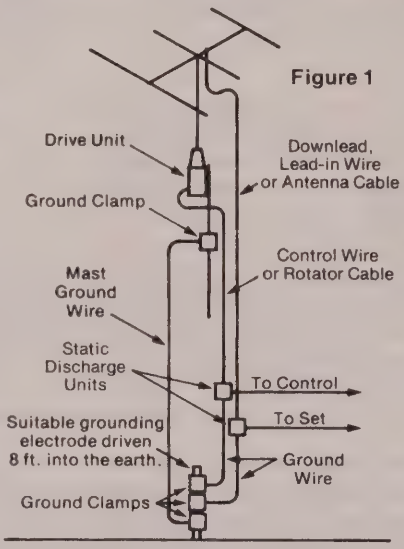


Figure 1
Drive Unit
Downlead, Lead-in Wire or Antenna Cable
Ground Clamp
Control Wire or Rotator Cable
Mast Ground Wire
Static Discharge Units
To Control
To Set
Suitable grounding electrode driven 8 ft. into the earth.
Ground Wire
Ground Clamps

2. An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits as contact with them might be fatal.
3. Your control is provided with ventilation openings to allow heat generated during operation to be released. If these openings are blocked, heat build-up can cause failure of the control and external damage. Therefore:
   - Never block ventilation slots by placing on a bed, sofa, rug, etc.;
   - Never place in a "built-in" enclosure unless properly ventilated;
   - Never cover the openings with cloth or other material;
   - Never place control near or over radiators, heat registers or other heat sources.
4. Your control may be equipped with a polarized AC line plug (one blade of the plug is wider than the other). This safety feature allows the plug to fit into the power outlet only one way. Should you be unable to insert the plug fully into the outlet, try reversing the plug. Should it still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.
5. Operate the control only from an A.C. power source as indicated on the bottom of the control. Do not use D.C.
6. Overloaded AC outlets and extension cords are dangerous, and so are frayed power cords and broken plugs. They may result in a shock or fire hazard. Unplug the control and call your service technician for replacement.
7. Do not allow anything to rest on or roll over the power cord, and do not place the control where power cord is subject to traffic or abuse. This may result in a shock or fire hazard.
8. All individuals, especially children, should be cautioned about dropping or pushing objects into any openings. Some internal parts carry hazardous voltages and contact can result in electrical shock. Objects dropped into the control may also result in a fire hazard.
9. Unplug the control before cleaning.. Use a slightly damp (not wet) cloth. Do not use an aerosol directly on the control since it may over spray and cause electrical shock.
10. Never expose the control to rain or water. If the control becomes damp or wet, or if liquids are spilled into it, unplug the control and have it inspected by a service technician before further use. Liquids, rain or excessive moisture may cause electrical shorts which can result in fire or shock hazards. Never operate the control near water, bathtub, sink, laundry tub or in a wet basement.
11. Whenever the unit exhibits distinct change in performance unplug the control and call your dealer or service technician.
12. Any attempt to disassemble the control or drive portions of this unit may expose you to high voltage or other hazards. Observe all cautionary labels, warnings and safeguards.
13. If the control has been dropped or the case has been damaged, fire and shock hazard may exist. Unplug the control and have it checked by a service technician before use.
14. When replacement parts are required, have the service technician verify that the replacements he uses have the same safety characteristics as the original parts. Use of manufacturers specified replacements can prevent fire, shock, or other hazards.
15. Upon completion of any service or repairs to the unit, please ask the service technician to perform routine safety checks to determine that the unit is in a safe operating condition.
16. For added protection of the control during a lightning storm or when control is to be left unattended for an extended period of time, unplug it from the wall outlet and disconnect the rotator cable. This will prevent possible shock, fire hazard and damage to the control due to lightning storms or power line surges.

RADIO SHACK LIMITED WARRANTY

This equipment is warranteed against defects for 90 days from date of purchase. Within this period, we will repair it without charge for parts and labor. Simply **bring your sales slip** as proof of purchase date to any Radio Shack store. Warranty does not cover transportation costs. Nor does it cover equipment subjected to misuse or accidental damage.

This Warranty gives you specific legal rights and you may also have other rights which vary from state to state.

We Service What We Sell

RADIO SHACK A DIVISION OF TANDY CORPORATION
U.S.A.: FORT WORTH, TEXAS 76102
CANADA: BARRIE, ONTARIO L4M 4W5

TANDY CORPORATION

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280-316 VICTORIA ROAD
RYDALMERE, N.S.W. 2116

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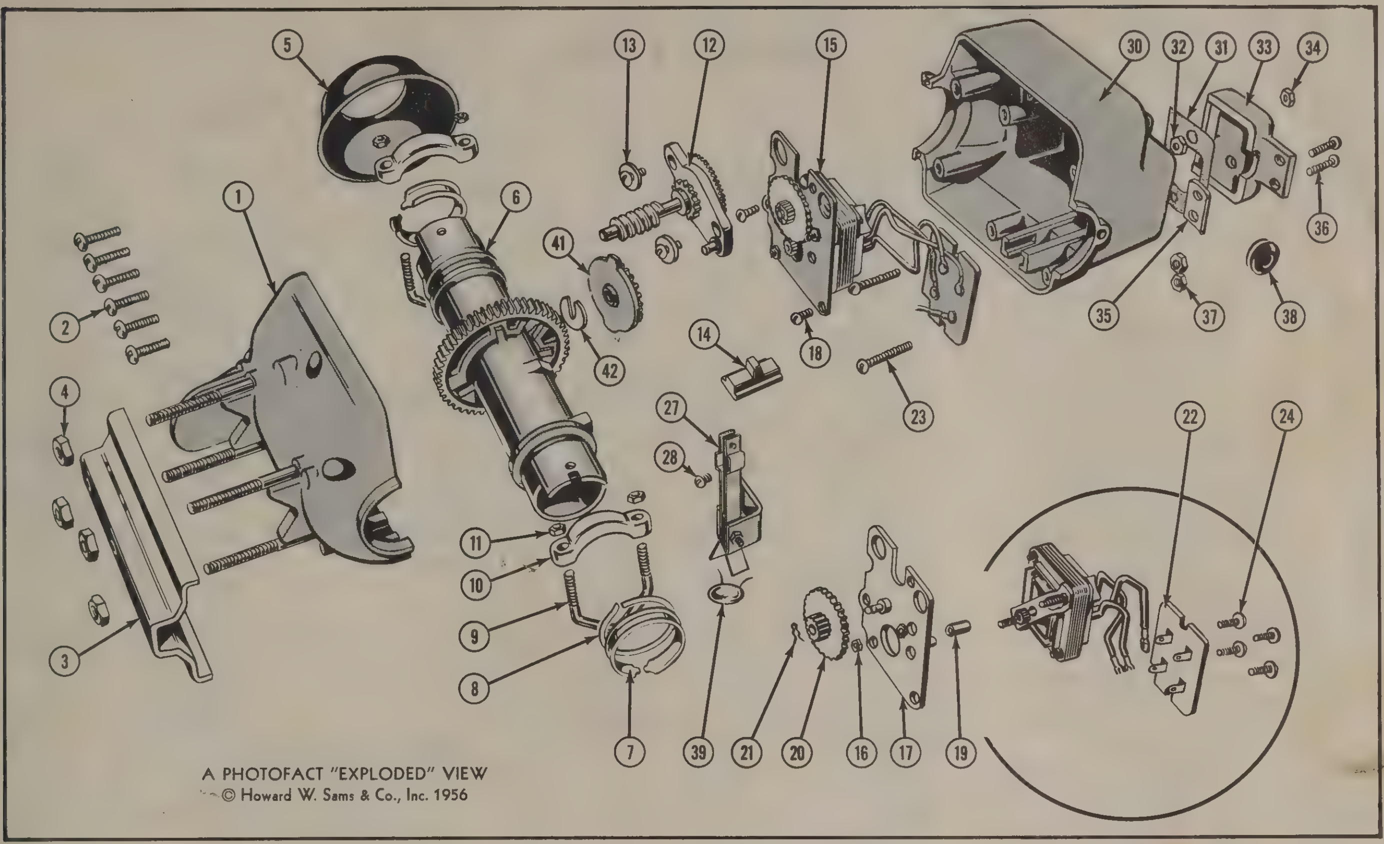
PARC INDUSTRIEL DE NANINNE
5140 NANINNE

U.K.
BILSTON ROAD WEDNESBURY
WEST MIDLANDS WS10 7JN

ALLIANCE TENNA ROTOR Model U-98



A PHOTOFACT "EXPLODED" VIEW
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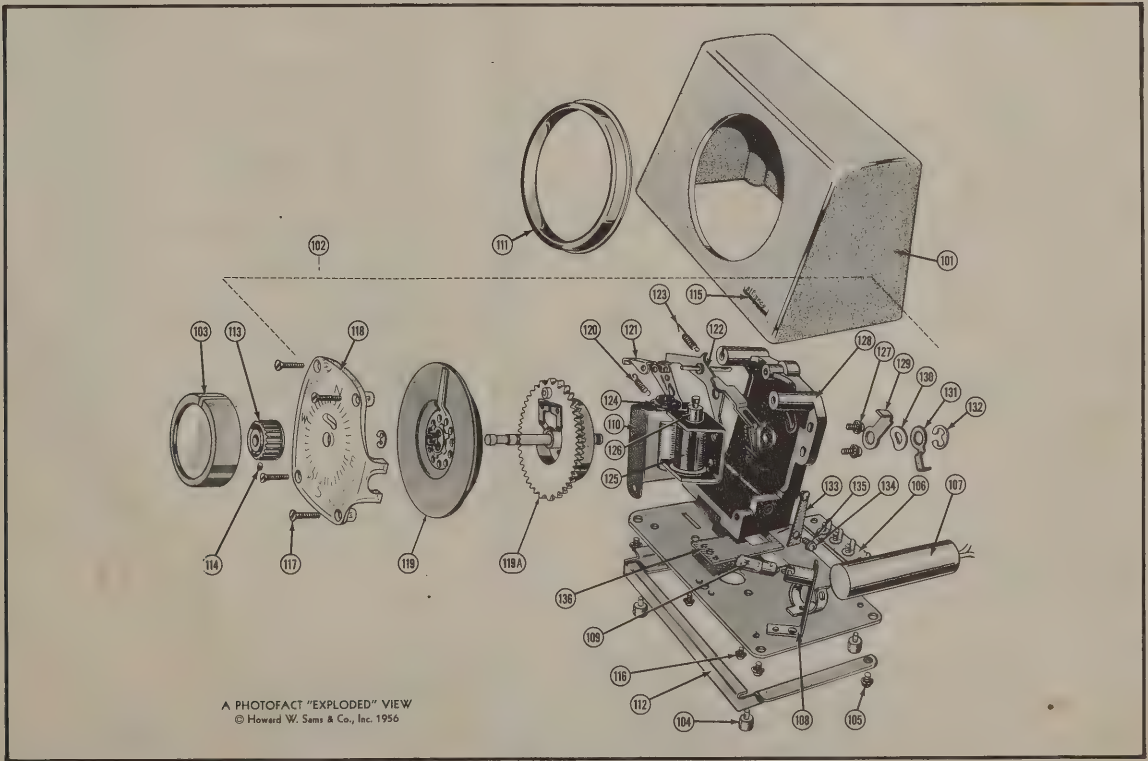
Exploded View of Rotator Unit.



A PHOTOFACT "EXPLODED" VIEW
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Exploded View of Control Box.

THE ALLIANCE MANUFACTURING CO., INC. • ALLIANCE, OHIO

ALLIANCE TENNA ROTOR Model U-98

PARTS LIST

ROTATOR

Item No.	Description	Part No.	List Price
	Rotator Assembly	Z-5471-R	$23.38
1	Housing Ass'y. R H	Y-5454-R	3.00
2	Housing Screws	10-32 x 3/4	*
3	Clamping Plate	X-5456-A	.65
4	Nut, Hex	1/4 x 20	*
5	Weather Shield	X-3375-C	.35
6	Shaft Assembly	Y-5463-S	3.90
**6	Shaft Assembly	Y-5463-T	3.90
7	Bearing Collar	X-3987-A	.10
8	Thrust Washer	X-3376-A	.20
9	U — Bolt	X-3377-A	.20
10	Mast Clamp	X-3319-A	.35
11	Nut, Hex	10-32	*
12	Worm Assembly	Y-5474-R	1.80
**12	Worm Assembly	Y-5474-S	1.80
13	Screw, R H Washer	8-32 x 3/8	*
14	Stop Slide	X-3320-A	.25
15	Motor & Term. Ass'y.	Y-5714-S	8.00
16	Nut, Hex	6-32	*
17	Mounting Plate Ass'y.	X-4263-R	.45
18	Screw, R H M	8-32 x 3/8	*
19	Spacers	X-4141-A	.10
20	Gear & Pinion Ass'y.	X-3373-R	.45
21	Hairpin Cotter	S-604-A	*
22	Terminal Plate	X-5700-R	.40
23	Screw, R H M	8-32 x 1	*
24	Screw, Binding Head	6-32 x 5/16	*
27	Contact Switch Ass'y.	Y-5908-R	.60
28	Screw, R H M	6-32 x 3/16	*
30	Housing Ass'y. L H	Z-5326-B	2.75
31	Gasket	X-5449-A	.06
32	Nut, Hex	8-32	*
33	Terminal Cover	Y-5327-A	.40
34	Nut	8-32	*
35	Strain Relief Clamp	X-3380-A	.10
36	Screw, R H M	6-32 x 1/2	*
37	Nut, Hex	6-32	*
38	Grommet	X-3387-B	.10
39	Capacitor	X-8533-B	.25
41	Cam & Gear	X-5584-B	.25
**41	Cam & Gear	X-4292-B	.25
42	Spring Clip	X-2825-A	*

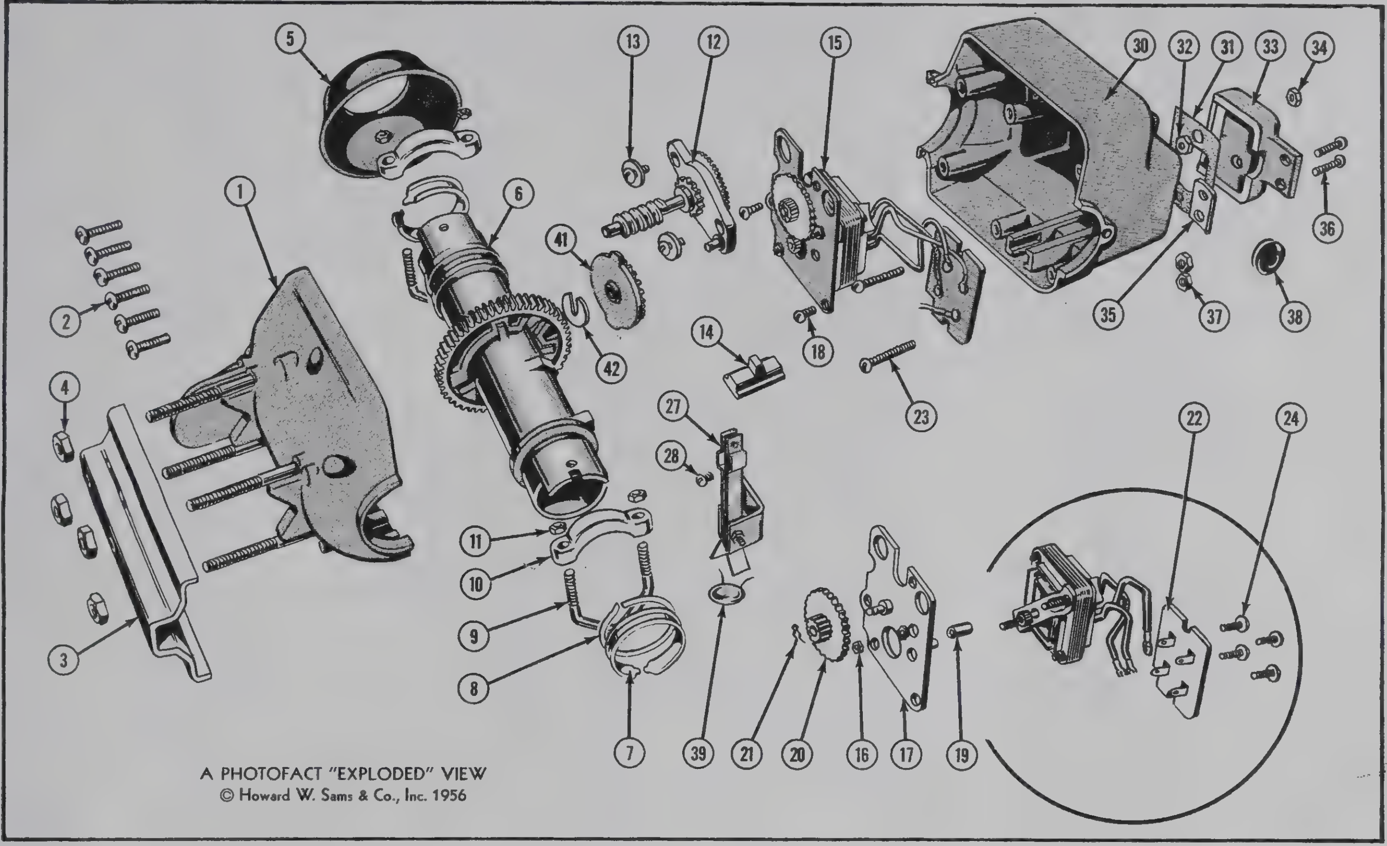
CONTROL BOX

Item No.	Description	Part No.	List Price
	Control Box Complete	Z-8515-R	$25.30
101	Case	W-5559-A	2.35
102	Frame & Dial Ass'y.	Z-8516-R	11.25
103	Knob	X-8529-R	.80
104	Bumper	X-5628-A	.05
105	Screw, R H Washer	8-32 x 3/8	*
106	Term. Strip Ass'y.	X-3803-S	.35
107	Capacitor	X-4098-A	1.80
108	Light Socket Ass'y.	Y-5558-R	.20
109	Bulb (Type 47)	X-4274-A	.25
110	Transformer	Y-5512-A	3.60
111	Bezel	Y-8525-B	.50
112	Trim Strip	Y-8528-A	.40
113	Knob Hub	Y-5555-A	.40
114	Set Screw	S-614-N	*
115	Emblem	X-8530-A	.15
116	Screw Self-tapping	6-20 x 1/2	*
117	Screw Self-tapping	6-20 x 5/8	*
118	Dial	Y-8519-A	.90
119	Spring Motor & Hub Assembly	Y-8534-R	3.30
119A	Detent Body Ass'y.	Z-5524-R	7.00
120	Pawl Spring	X-5667-A	.10
121	Pawl	X-8518-A	.20
122	Pawl Lifter Ass'y.	X-8512-R	.30
123	Spring Tension	X-8520-A	.10
124	Grommet	X-8509-A	.05
125	Solenoid Assembly	Y-8511-R	1.45
126	Plunger	X-8504-A	.35
127	Screw, Hex H Washer	6-32 x 1/2	*
128	Frame Assembly	Z-5515-S	1.45
129	Stop Lever	X-5537-A	.05
130	Spring Washer	X-5568-A	.05
131	Terminal	X-5540-A	.05
132	Retaining Ring	X-4243-B	.06
133	Indent Spring Ass'y.	X-5518-R	.30
134	Screw, R H M	6-32 x 3/8	*
135	Washer	5/16	*
136	Tuning Spring	X-5563-A	.10

* Parts Packed 100 Per Package (Price $1.50 Per Pgk. Net)

** 1 R P M Parts — Used on all U98 Rotors manufactured after June 1, 1958.
Serial Nos. U840501 and over.

ALLIANCE TENNA ROTOR   Model U-98



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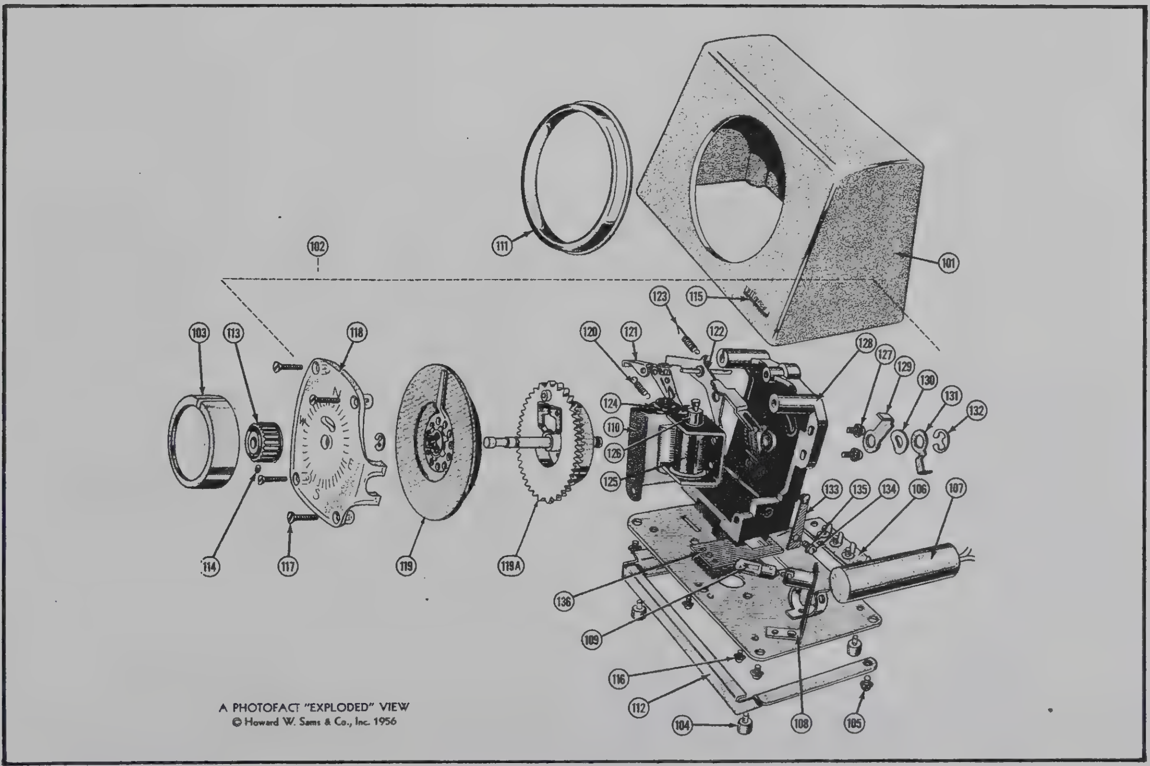
Exploded View of Rotator Unit.



A PHOTOFACT "EXPLODED" VIEW
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Exploded View of Control Box.

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ALLIANCE TENNA ROTOR Model U-98

PARTS LIST

ROTATOR

Item No.	Description	Part No.	List Price
	Rotator Assembly	Z-5471-R	$23.38
1	Housing Ass'y. R H	Y-5454-R	3.00
2	Housing Screws	10-32 x 3/4	*
3	Clamping Plate	X-5456-A	.65
4	Nut, Hex	1/4 x 20	*
5	Weather Shield	X-3375-C	.35
6	Shaft Assembly	Y-5463-S	3.90
**6	Shaft Assembly	Y-5463-T	3.90
7	Bearing Collar	X-3987-A	.10
8	Thrust Washer	X-3376-A	.20
9	U — Bolt	X-3377-A	.20
10	Mast Clamp	X-3319-A	.35
11	Nut, Hex	10-32	*
12	Worm Assembly	Y-5474-R	1.80
**12	Worm Assembly	Y-5474-S	1.80
13	Screw, R H Washer	8-32 x 3/8	*
14	Stop Slide	X-3320-A	.25
15	Motor & Term. Ass'y.	Y-5714-S	8.00
16	Nut, Hex	6-32	*
17	Mounting Plate Ass'y.	X-4263-R	.45
18	Screw, R H M	8-32 x 3/8	*
19	Spacers	X-4141-A	.10
20	Gear & Pinion Ass'y.	X-3373-R	.45
21	Hairpin Cotter	S-604-A	*
22	Terminal Plate	X-5700-R	.40
23	Screw, R H M	8-32 x 1	*
24	Screw, Binding Head	6-32 x 5/16	*
27	Contact Switch Ass'y.	Y-5908-R	.60
28	Screw, R H M	6-32 x 3/16	*
30	Housing Ass'y. L H	Z-5326-B	2.75
31	Gasket	X-5449-A	.06
32	Nut, Hex	8-32	*
33	Terminal Cover	Y-5327-A	.40
34	Nut	8-32	*
35	Strain Relief Clamp	X-3380-A	.10
36	Screw, R H M	6-32 x 1/2	*
37	Nut, Hex	6-32	*
38	Grommet	X-3387-B	.10
39	Capacitor	X-8533-B	.25
41	Cam & Gear	X-5584-B	.25
**41	Cam & Gear	X-4292-B	.25
42	Spring Clip	X-2825-A	*

CONTROL BOX

Item No.	Description	Part No.	List Price
	Control Box Complete	Z-8515-R	$25.30
101	Case	W-5559-A	2.35
102	Frame & Dial Ass'y.	Z-8516-R	11.25
103	Knob	X-8529-R	.80
104	Bumper	X-5628-A	.05
105	Screw, R H Washer	8-32 x 3/8	*
106	Term. Strip Ass'y.	X-3803-S	.35
107	Capacitor	X-4098-A	1.80
108	Light Socket Ass'y.	Y-5558-R	.20
109	Bulb (Type 47)	X-4274-A	.25
110	Transformer	Y-5512-A	3.60
111	Bezel	Y-8525-B	.50
112	Trim Strip	Y-8528-A	.40
113	Knob Hub	Y-5555-A	.40
114	Set Screw	S-614-N	*
115	Emblem	X-8530-A	.15
116	Screw Self-tapping	6-20 x 1/2	*
117	Screw Self-tapping	6-20 x 5/8	*
118	Dial	Y-8519-A	.90
119	Spring Motor & Hub Assembly	Y-8534-R	3.30
119A	Detent Body Ass'y.	Z-5524-R	7.00
120	Pawl Spring	X-5667-A	.10
121	Pawl	X-8518-A	.20
122	Pawl Lifter Ass'y.	X-8512-R	.30
123	Spring Tension	X-8520-A	.10
124	Grommet	X-8509-A	.05
125	Solenoid Assembly	Y-8511-R	1.45
126	Plunger	X-8504-A	.35
127	Screw, Hex H Washer	6-32 x 1/2	*
128	Frame Assembly	Z-5515-S	1.45
129	Stop Lever	X-5537-A	.05
130	Spring Washer	X-5568-A	.05
131	Terminal	X-5540-A	.05
132	Retaining Ring	X-4243-B	.06
133	Indent Spring Ass'y.	X-5518-R	.30
134	Screw, R H M	6-32 x 3/8	*
135	Washer	5/16	*
136	Tuning Spring	X-5563-A	.10

* Parts Packed 100 Per Package (Price $1.50 Per Pgk. Net)

** 1 R P M Parts — Used on all U98 Rotors manufactured after June 1, 1958.
Serial Nos. U840501 and over.

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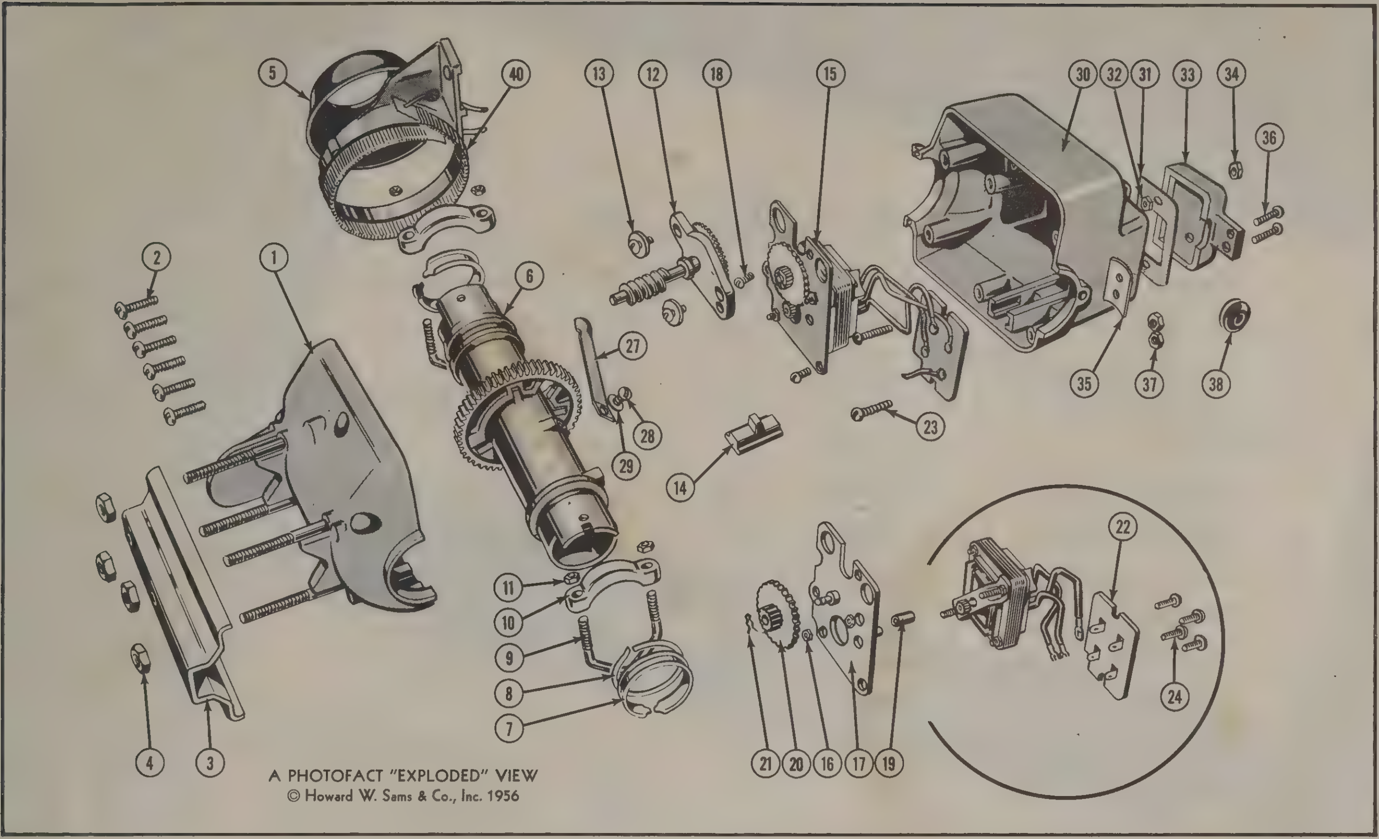

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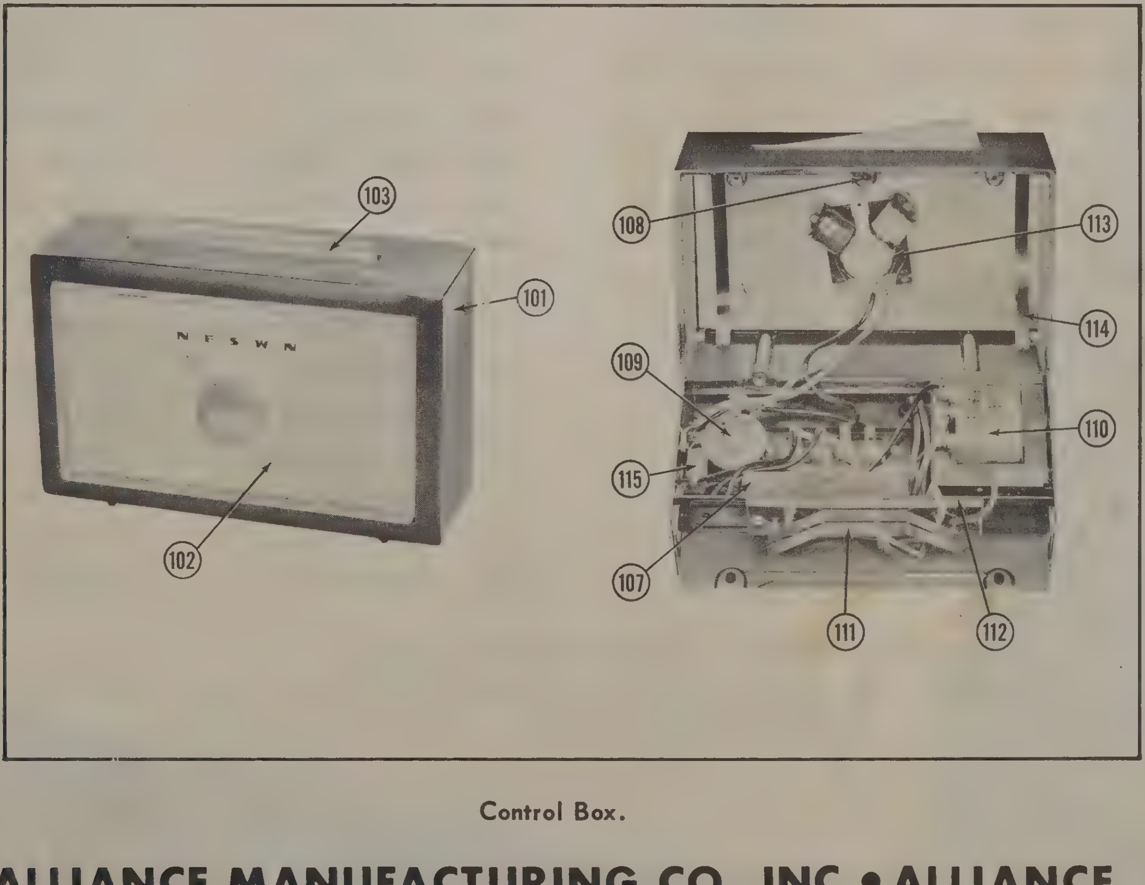
Exploded View of Rotator Unit.



Control Box.

ALLIANCE TENNA ROTOR Model T-12

PARTS LIST

ROTATOR

Item No.	Description	Part No.	List Price
	Rotator Assembly	Z-5460-R	$18.65
1	Housing Ass'y R H	Y-5454-R	3.00
2	Housing Screws	10-32 x 3/4	*
3	Clamping Plate	X-5456-A	.65
4	Nut, Hex	1/4 x 20	*
5	Weather Shield	X-3375-B	.35
6	Shaft Assembly	Y-5463-S	3.90
**6	Shaft Assembly	Y-5463-T	3.90
7	Bearing Collar	X-3987-A	.10
8	Thrust Washer	X-3376-A	.20
9	U — Bolt	X-3377-A	.20
10	Mast Clamp	X-3319-A	.35
11	Nut, Hex	10-32	*
12	Worm Assembly	Y-5462-R	1.50
**12	Worm Assembly	Y-5462-S	1.50
13	Screw, R H Washer	8-32 x 3/8	*
14	Stop Slide	X-3320-A	.25
15	Motor & Term. Ass'y.	Y-5726-R	7.50
16	Nut, Hex	6-32	*
17	Mounting Plate Ass'y.	X-4263-R	.45
18	Screw, R H M	8-32 x 3/8	*
19	Spacers	X-4141-A	.10
20	Gear & Pinion Ass'y.	X-3373-R	.45
21	Hairpin Cotter	S-604-A	*
22	Terminal Plate	X-5700-R	.40
23	Screw, R H M	8-32 x 1	*
24	Screw, Binding Head	6-32 x 5/16	*
27	Contact Spring	X-8539-A	.05
28	Screw, Self-tapping	6-20 x 1/4	*
29	Lock Washer	X-2128-A	*

ROTATOR (Cont'd.)

Item No.	Description	Part No.	List Price
30	Housing Ass'y L H	Z-5326-B	$ 2.75
31	Gasket	X-5449-A	.06
32	Nut, Hex	8-32	*
33	Terminal Cover	Y-5327-A	.40
34	Nut	8-32	*
35	Strain Relief Clamp	X-3380-A	.10
36	Screw, R H M	6-32 x 1/2	*
37	Nut, Hex	6-32	*
38	Grommet	X-3387-B	.10
40	Potentiometer	Y-5725-R	1.50

CONTROL BOX

Item No.	Description	Part No.	List Price
	Control Box Complete	Z-5877-R	$19.00
101	Case	Z-5481-A	1.60
102	Window	Y-5485-A	.75
103	Control Bar	X-5484-A	.25
104	Foot Pads	X-5756-A	.05
105	Screw, R H M	6-32 x 1/4	*
106	Term. Strip Ass'y.	X-3803-S	.35
107	Capacitor	X-4098-B	1.90
108	Pivot Pin	X-5355-A	.15
109	Calibrating Resistor	X-4094-C	.95
110	Transformer	Y-5880-R	3.40
111	Switch Assembly	X-5864-S	.95
112	Insulating Strip	X-5351-A	.10
113	Meter & Panel Ass'y.	Y-5765-R	5.50
114	Panel Retainer	X-5495-A	.06
115	Potentiometer	X-8532-B	.80

* Parts Packed 100 Per Package (Price $1.50 Per Pgk. Net)

** 1 RPM — Used on all T12 Rotors manufactured after June 1, 1958.
Serial Nos. T1122001 and over.

THE ALLIANCE MANUFACTURING CO., INC. • ALLIANCE, OHIO

Cat. No. 15-1225B

OWNER'S MANUAL

Please read before using this equipment

ARCHEROTOR®

Antenna Rotator

Your Archerotor lets you turn and accurately position even the largest TV antennas from inside your home. This ensures the best possible TV reception. When you turn the control's dial for the desired direction, the drive motor turns the antenna. When the antenna reaches the desired direction, the motor automatically turns off.

Important Note: For your safety, read "Important Safeguards" and all safety, installation, and operating instructions supplied with your antenna. Keep this manual for your future reference.

PRELIMINARY TESTING

Before you install the Archerotor, do the following:

☐ In your home, temporarily connect the drive to the control. See "Wiring the Drive Motor" and "Wiring the Control."

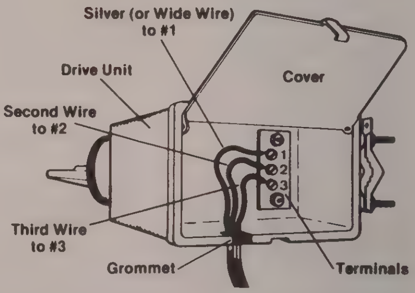
☐ Test the Archerotor as described under "Synchronizing and Testing."

INSTALLATION

Use 20-gauge three-wire rotator cable, such as Radio Shack Cat. No. 15-1149 or 15-1150, to connect the drive to the control.

Wiring the Drive Motor

Follow these steps to wire the drive motor.



1. Snap open the drive's cover using a coin or screwdriver.
2. Remove the grommet and insert the rotator cable through the grommet's slot.
3. Separate the cable's three wires about 1 ½ inches down the cable and strip off about ½ inch of insulation from each wire.
4. Connect the wide wire to Terminal 1, connect the center wire to Terminal 2, and connect the third wire to Terminal 3.

   Caution: Be sure there are no loose strands of wire that can short between terminals.
5. Recheck the wiring order and press the grommet back into the housing.
6. Close the cover securely.

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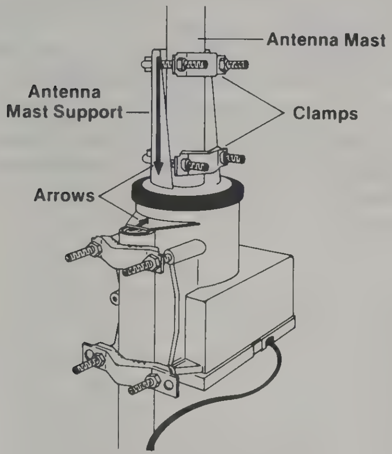
Mounting the Antenna

Follow these steps to mount the antenna.

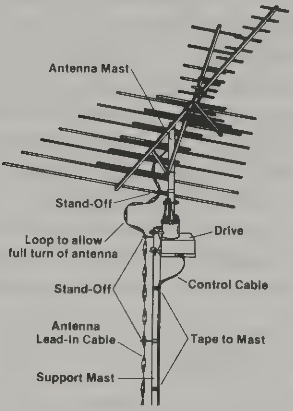


1. Loosen the clamps on the drive's antenna mast support enough to accept the mast.
2. Insert the antenna mast between the clamps. Then, rotate the antenna mast until the antenna points south, and tighten the clamp nuts.

   Caution: Overtightening can deform and weaken the mast.

   Note: When most desired stations are north, point the antenna north. If you do this, remember that the antenna points in the opposite direction from that indicated on the control. Use the direction markers as described under "Channel and Direction Markers."
3. Attach the antenna cable to the antenna.

Routing the Cables



- If you have 75-ohm coaxial antenna cable, tape the cable directly to the support mast.
- If you have 300-ohm twin-lead antenna cable, attach it to the antenna and support mast using stand-off insulators (not included) about every 4 feet. Twist the cable about four times between each insulator.

For either type of antenna cable, provide a generous loop at the drive to allow full rotation of the antenna.

Tape the rotator cable directly to the support mast.

Route the antenna cable and rotator cable to the location of your TV and Archerotor control. Then, connect the antenna cable to your TV and connect the rotator cable to the control. See "Wiring the Control."

CHANNEL AND DIRECTION MARKERS

Use the provided channel markers to mark the control with the desired antenna position for each channel. Use the direction markers to re-label the direction indicators on the control (if you pointed your antenna north instead of south). Place each direction marker over the control's direction indicator that represents the opposite direction.

OPERATION

To rotate the antenna, turn the control's dial for the desired direction. While the antenna rotates, the indicator dot moves, indicating the direction of antenna rotation. When the antenna reaches the selected direction, it stops.

Caution: Do not force the control's dial fully clockwise past N or fully counterclockwise past N. Doing so might damage the control.

REPOSITIONING YOUR ANTENNA

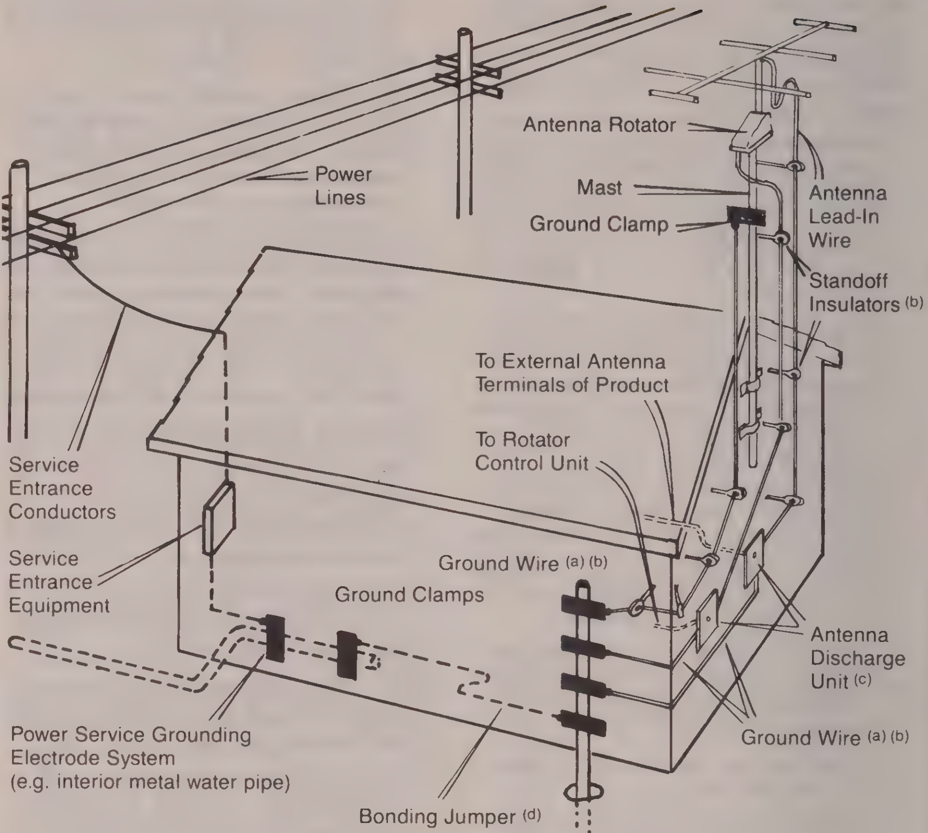
If a TV channel's reception gets worse after you place the channel marker for a channel, heavy winds might have moved the antenna. If this happens, reposition the antenna so that it points in the proper direction and tighten all clamps on the drive.

IMPORTANT SAFEGUARDS

Your antenna drive unit, consisting of a control and a drive, has been engineered and manufactured to assure your personal safety, but improper installation or abuse of this unit, or the antenna connected to it, can result in potential electrical shock hazards. In order not to defeat the safeguards incorporated in this unit, observe the following basic rules for its installation, use, and servicing.

1. An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits, as contact with them might be fatal.
2. If the drive unit is installed on an outdoor antenna, be sure the antenna system is grounded so as to provide some protection against voltage surges and built-up static charges. Section 810 of the National Electrical Code, ANSI/NFPA70, or CSA C22.1 Sections 10, 16, and 54, of the Canadian Electrical Code, provides information with respect to proper grounding of the mast and supporting structure, grounding of the antenna lead-in wire and drive-unit to control-unit interconnecting cables to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See grounding code on the back of this page.
3. Your control is provided with ventilation openings to allow heat generated during operation to be released. If these openings are blocked, heat build-up can cause failure of the control and external damage. Therefore:
   - Never block the ventilation slots by placing it on a bed, sofa, rug, etc.
   - Never place in a built-in enclosure unless proper ventilation is provided.
   - Never cover the openings with cloth or other material.
   - Never place near or over radiators, heat registers, amplifiers, or other heat sources.
4. Your control may be equipped with with a polarized AC line plug (one blade of the plug is wider than the other). This safety feature allows the plug to fit into the power outlet only one way. Should you be unable to insert the plug fully into the outlet, try reversing the plug. Should it still fail to fit, contact your electrician to replace the obsolete outlet. Do not defeat the safety purpose of the polarized plug.
5. Operate the control only from an AC power source as indicated on the bottom of the control. Do not use DC.
6. Overloaded AC outlets and extension cords are dangerous, and so are frayed power cords and broken plugs. They may result in a shock or fire hazard. Unplug the control and call your service technician for replacement.
7. Do not allow anything to rest on or roll over the power cord, and do not place the control where the power cord is subject to traffic or abuse. Pay particular attention to the cord at the plug and the point where it exits from the control unit. This may result in a shock or fire hazard.
8. All individuals, especially children, should be cautioned about dropping or pushing objects into any openings. Some internal parts carry hazardous voltages and contact can result in electrical shock. Objects dropped into the control may also result in a fire hazard.
9. Never expose the control to rain or water. If the control becomes damp or wet, or if liquids are spilled into it, unplug the control and have it inspected by a service technician before further use. Liquids, rain, or excessive moisture may cause electrical shorts which can result in fire or shock hazards. Never operate the control near water; such as a swimming pool, etc. or near a bathtub, sink, laundry tub, or in a wet basement.
10. Unplug the control before cleaning. Use a slightly damp (not wet) cloth. Do not use an aerosol directly on the control, since it may overspray and cause electrical shock.
11. Whenever the unit exhibits distinct change in performance, unplug the control and call your dealer or service technician.
12. Any attempt to disassemble the control or drive portions of this unit may expose you to high voltage or other hazards. Observe all cautionary labels, warnings, and safeguards.
13. If the control has been dropped or the case has been damaged, fire and shock hazard may exist. Unplug the control and have it checked by a service technician before use.
14. When replacement parts are required, have the service technician verify that the replacement parts have the same safety characteristics as the original parts. Unauthorized substitutions may result in a risk of fire or electric shock, or other risks.
15. Upon completion of any service or repairs to the unit, please ask the service technician to perform routine safety checks to determine that the unit is in a safe operating condition.
16. For added protection of the control during a lightning storm or when the control is to be left unattended for an extended period of time, unplug it from the wall outlet and disconnect the drive cable. This will prevent possible shock, fire hazard, and damage to the control due to lightning storms or power line surges.
17. Always use extreme caution when installing a rooftop antenna and drive system to reduce the risk of falls. Wear rubber-soled shoes and use a sturdy ladder. Do not install on a windy day or when the roof is wet or is covered with ice or snow.

Example of Antenna Grounding in Accordance with National Electrical Code Instructions


Power Lines
Antenna Rotator
Mast
Ground Clamp
Antenna Lead-In Wire
Standoff Insulators (b)
To External Antenna Terminals of Product
To Rotator Control Unit
Service Entrance Conductors
Service Entrance Equipment
Ground Wire (a) (b)
Ground Clamps
Antenna Discharge Unit (c)
Ground Wire (a) (b)
Power Service Grounding Electrode System (e.g. interior metal water pipe)
Bonding Jumper (d)

Optional Antenna Grounding Electrode driven 8 feet (2.44 m) into the earth if required by local codes. See Nec Section 810-21 (f).

- **(a)** Use No. 10 AWG (5.3 mm²) copper, No. 8 AWG (8.4 mm²) aluminum, No. 17 AWG (1.0 mm²) copper-clad steel or bronze wire, or larger, as a ground wire.
- **(b)** Secure antenna lead-in and ground-wires to house with stand-off insulators spaced from 4—6 feet (1.22—1.83 m) apart.
- **(c)** Mount antenna discharge units as close as possible to where lead-in and rotator wires enter house.
- **(d)** Use jumper wire not smaller than No. 6 AWG (13.3 mm²) copper, or the equivalent, when a separate antenna-grounding electrode is used.

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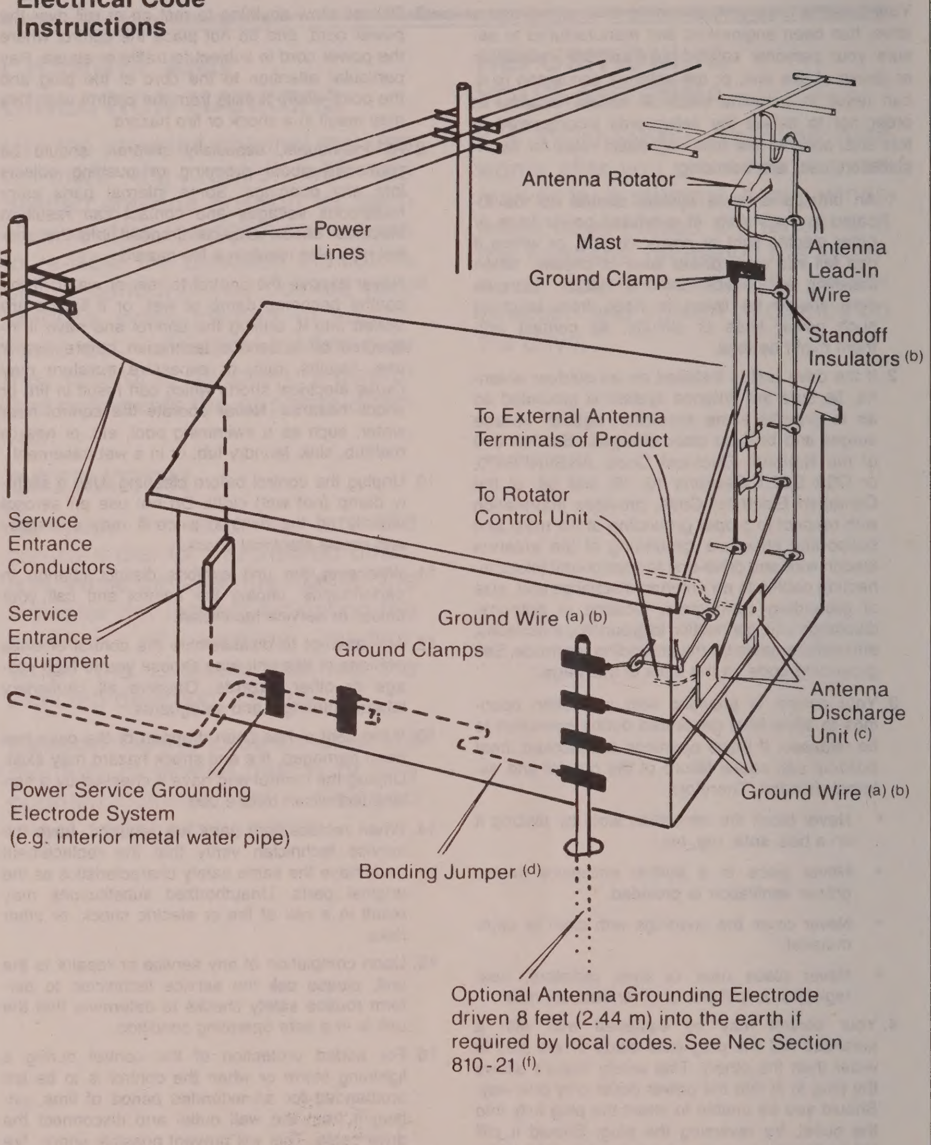
NOTES

Example of Antenna Grounding in Accordance with National Electrical Code Instructions


Power Lines
Antenna Rotator
Mast
Ground Clamp
Antenna Lead-In Wire
Standoff Insulators (b)
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Service Entrance Conductors
Service Entrance Equipment
Ground Wire (a) (b)
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Ground Wire (a) (b)
Power Service Grounding Electrode System (e.g. interior metal water pipe)
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Optional Antenna Grounding Electrode driven 8 feet (2.44 m) into the earth if required by local codes. See Nec Section 810-21 (f).

(a) Use No. 10 AWG (5.3 mm²) copper, No. 8 AWG (8.4 mm²) aluminum, No. 17 AWG (1.0 mm²) copper-clad steel or bronze wire, or larger, as a ground wire.

(b) Secure antenna lead-in and ground-wires to house with stand-off insulators spaced from 4—6 feet (1.22—1.83 m) apart.

(c) Mount antenna discharge units as close as possible to where lead-in and rotator wires enter house.

(d) Use jumper wire not smaller than No. 6 AWG (13.3 mm²) copper, or the equivalent, when a separate antenna-grounding electrode is used.

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CHANNEL AND DIRECTION MARKERS

Use the provided channel markers to mark the control with the desired antenna position for each channel. Use the direction markers to re-label the direction indicators on the control (if you pointed your antenna north instead of south). Place each direction marker over the control's direction indicator that represents the opposite direction.

OPERATION

To rotate the antenna, turn the control's dial for the desired direction. While the antenna rotates, the indicator dot moves, indicating the direction of antenna rotation. When the antenna reaches the selected direction, it stops.

Caution: Do not force the control's dial fully clockwise past N or fully counterclockwise past N. Doing so might damage the control.

REPOSITIONING YOUR ANTENNA

If a TV channel's reception gets worse after you place the channel marker for a channel, heavy winds might have moved the antenna. If this happens, reposition the antenna so that it points in the proper direction and tighten all clamps on the drive.

NOTES

RADIO SHACK LIMITED WARRANTY

This product is warranted against defects for 90 days from date of purchase from Radio Shack company-owned stores and authorized Radio Shack franchisees and dealers. Within this period, we will repair it without charge for parts and labor. Simply **bring your Radio Shack sales slip** as proof of purchase date to any Radio Shack store. Warranty does not cover transportation costs. Nor does it cover a product subjected to misuse or accidental damage.

EXCEPT AS PROVIDED HEREIN, RADIO SHACK MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Some states do not permit limitation or exclusion of implied warranties; therefore, the aforesaid limitation(s) or exclusion(s) may not apply to the purchaser.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

We Service What We Sell

RADIO SHACK
A Division of Tandy Corporation
Fort Worth, Texas 76102

2A0

Printed in U.S.A.

CF-4889 Rev. 4/90 **A**

Cat. No. 15-1225B

OWNER'S MANUAL

Please read before using this equipment

ARCHEROTOR®

Antenna Rotator

Your Archerotor lets you turn and accurately position even the largest TV antennas from inside your home. This ensures the best possible TV reception. When you turn the control's dial for the desired direction, the drive motor turns the antenna. When the antenna reaches the desired direction, the motor automatically turns off.

Important Note: For your safety, read "Important Safeguards" and all safety, installation, and operating instructions supplied with your antenna. Keep this manual for your future reference.

PRELIMINARY TESTING

Before you install the Archerotor, do the following:

☐ In your home, temporarily connect the drive to the control. See "Wiring the Drive Motor" and "Wiring the Control."

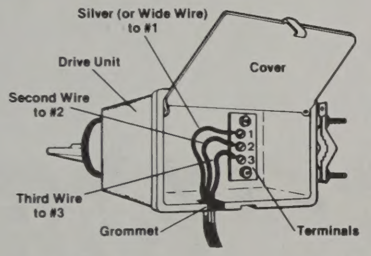
☐ Test the Archerotor as described under "Synchronizing and Testing."

INSTALLATION

Use 20-gauge three-wire rotator cable, such as Radio Shack Cat. No. 15-1149 or 15-1150, to connect the drive to the control.

Wiring the Drive Motor

Follow these steps to wire the drive motor.



1. Snap open the drive's cover using a coin or screwdriver.
2. Remove the grommet and insert the rotator cable through the grommet's slot.
3. Separate the cable's three wires about 1 ½ inches down the cable and strip off about ½ inch of insulation from each wire.
4. Connect the wide wire to Terminal 1, connect the center wire to Terminal 2, and connect the third wire to Terminal 3.

   Caution: Be sure there are no loose strands of wire that can short between terminals.
5. Recheck the wiring order and press the grommet back into the housing.
6. Close the cover securely.

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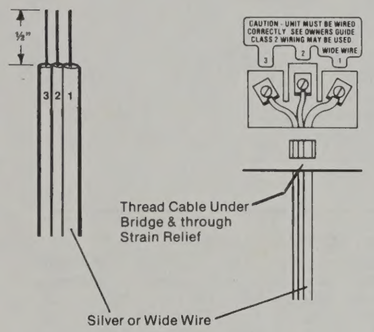
Wiring the Control

Follow these steps to wire the control.


½"
3
2
1
CAUTION - UNIT MUST BE WIRED CORRECTLY SEE OWNERS GUIDE CLASS 2 WIRING MAY BE USED
3
2
WIDE WIRE
1
Thread Cable Under Bridge & through Strain Relief
Silver or Wide Wire

1. On the other end of the rotator cable, separate the wires about 1 ½ inches down the cable and strip about ½ inch of insulation from each wire.
2. Run the cable through the strain relief slot on the bottom of the control and connect the wires as follows:

   Connect the wide wire to Terminal 1, connect the center wire to Terminal 2, and connect the third wire to Terminal 3.
3. Recheck the wiring order and tighten all the terminal screws.

Caution: Be sure there are no loose strands of wire that could short between terminals.

Warning: To reduce the risk of electric shock, do not remove cover. No user-serviceable parts inside. Refer servicing to qualified service personnel.

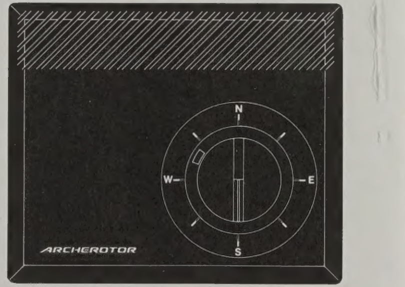
The lightning symbol indicates the presence of uninsulated "Dangerous Voltage" within the product's enclosure that may constitute a risk of electric shock.

The exclamation point indicates the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Synchronizing and Testing

Follow these steps to synchronize and test the Archerotor.

1. After you wire the drive and control, plug the control's power cord into a standard AC outlet (120 volts, 60 Hz).
2. Turn the control's dial fully clockwise. The indicator dot on the control's disc moves clockwise and you can hear the control's motor.

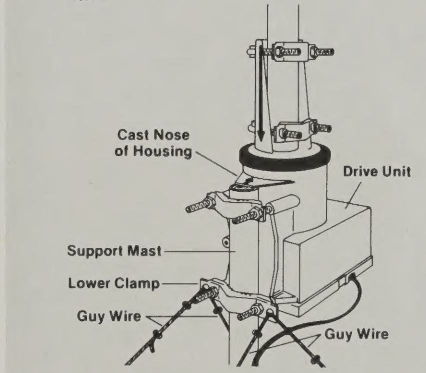
   When the antenna reaches the end of rotation, the dot stops and the control turns off.
3. Turn the control's dial fully counterclockwise. When the dot stops and the control turns off, the control and drive are synchronized.

4. Turn the control's dial to S (south) to align the two arrows on the drive.
5. Disconnect the rotator cable from the control so that you can mount the drive.

Mounting the Drive

You can mount the drive on a support mast 1 ¼ inch to 2 inches in diameter. If the mast is over 5 feet long, we recommend that you use guy wires to secure the mast.

Warning: Select a mounting location where the antenna cannot come in contact with power lines while you install it, and where the installation cannot fall across power lines if a guy wire should fail.



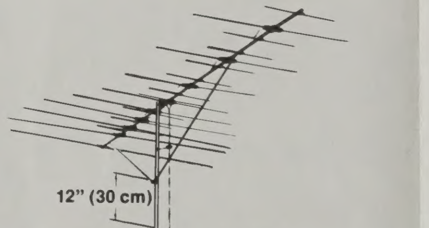
1. Loosen the support mast clamp nuts enough to fit the clamps over the mast.
2. Lower the drive onto the mast until the cast nose of the drive's housing sits on top of the mast.
3. Use a 7⁄16-inch wrench to tighten the clamps' nuts.

   Caution: Overtightening can deform and weaken the mast.
4. If you use guy wires to secure the mast, guide the wires through the two holes of the lower clamp.

Antenna Mast

Before you mount the antenna, cut the antenna mast using the following guidelines. If the antenna boom is:

- Up to 5 feet long, the mast length should not exceed 5 feet.
- Up to 8 feet long, the mast length should not exceed 3 feet.
- Over 8 feet long, the mast length should not exceed 2 feet.
- Over 8 feet long with braces, cut the antenna mast 12 inches below the point where you attach the braces to the mast.

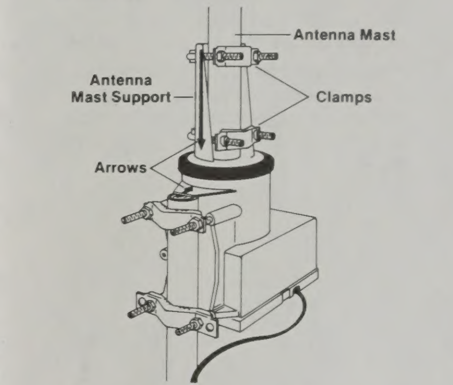


Large Antenna with Braces

If you mount two antennas to the mast, the mast length should not exceed 4 feet. Mount the small antenna on top of the mast and the larger antenna 12 inches from the bottom of the mast.

Mounting the Antenna

Follow these steps to mount the antenna.

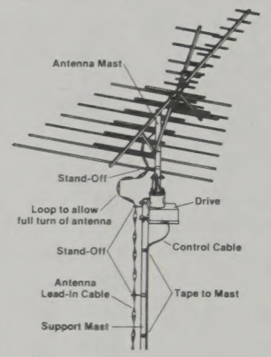


1. Loosen the clamps on the drive's antenna mast support enough to accept the mast.
2. Insert the antenna mast between the clamps. Then, rotate the antenna mast until the antenna points south, and tighten the clamp nuts.

   Caution: Overtightening can deform and weaken the mast.

   Note: When most desired stations are north, point the antenna north. If you do this, remember that the antenna points in the opposite direction from that indicated on the control. Use the direction markers as described under "Channel and Direction Markers."
3. Attach the antenna cable to the antenna.

Routing the Cables



- If you have 75-ohm coaxial antenna cable, tape the cable directly to the support mast.
- If you have 300-ohm twin-lead antenna cable, attach it to the antenna and support mast using stand-off insulators (not included) about every 4 feet. Twist the cable about four times between each insulator.

For either type of antenna cable, provide a generous loop at the drive to allow full rotation of the antenna.

Tape the rotator cable directly to the support mast.

Route the antenna cable and rotator cable to the location of your TV and Archerotor control. Then, connect the antenna cable to your TV and connect the rotator cable to the control. See "Wiring the Control."

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EXCEPT AS PROVIDED HEREIN, RADIO SHACK MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Some states do not permit limitation or exclusion of implied warranties; therefore, the aforesaid limitation(s) or exclusion(s) may not apply to the purchaser.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

We Service What We Sell

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